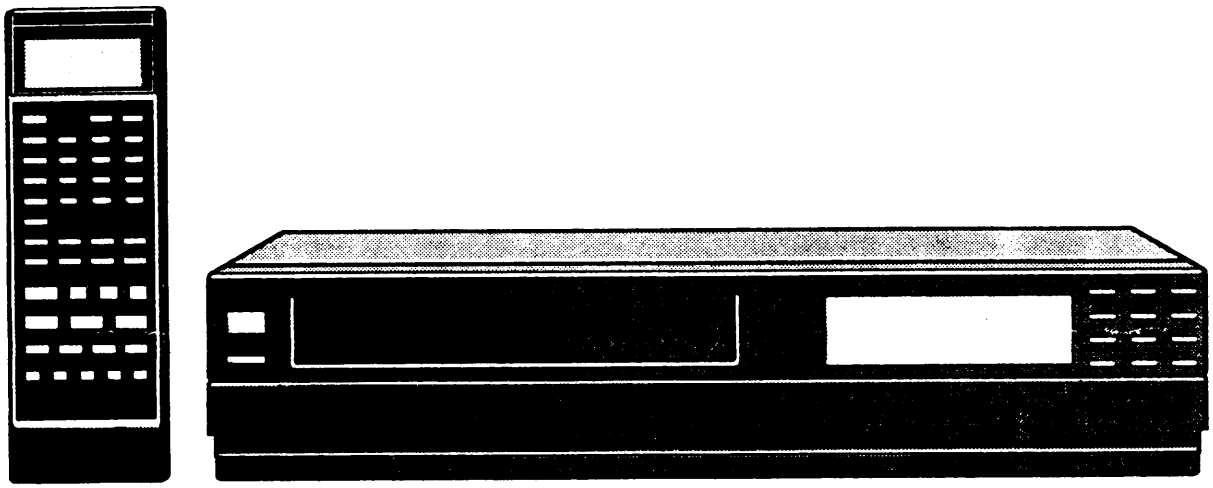
PARTS LIST &
CIRCUIT DIAGRAMS

SANYO

VHR-D500G, EX

COLOUR VIDEO CASSETTE RECORDER

VHS HQ DIGITAL
PAL



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PRODUCT SAFETY NOTICE

The components designated by a symbol (⚠) in this schematic diagram designates components whose value are of special significance to product safety. Should any component designated by a symbol need to be replaced, use only the part designated in the Parts List. Do not deviate from the resistance, wattage and voltage ratings shown.

NOTE : Parts order must contain Model Number, Part Number and Description.

ACCESSORIES

Ref No.	Part No.	Description
	143-6-410T-03100	INST MANUAL
	143-9-4100-68920	REMOTE CONTROL
	143-6-415T-03100	NOTICE,FTZ

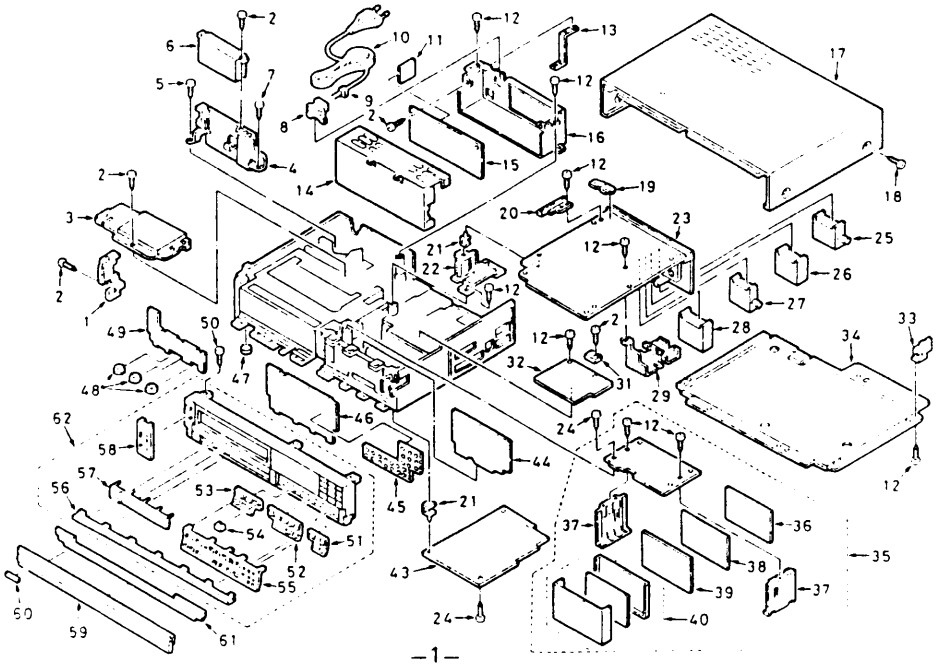
PACKING MATERIALS

Ref No.	Part No.	Description
	143-6-132T-86400	INNER CARTON(VHR-D500G)
	143-6-132T-86401	INNER CARTON(VHR-D500EX)
	143-6-251T-17600	IND POLYE COVER
	143-6-144T-20300	FORM PLASTIC CASE,FRONT
	143-6-144T-20400	FORM PLASTIC CASE,REAR

CABINET & CHASSIS PARTS

Ref No.	Part No.	Description
1	143-2-351T-80100	BRACKET MTG
2	411 021 6405	SCR S-TPG BIN 3X8
3	143-2-322T-85800	SHIELD PLATE
4	143-2-351T-79400	BRACKET MTG
5	411 045 6702	SCR PAN+SW 3X8
6	143-0-233V-47524	VP-1 ASSY
7	411 045 4807	SCR PAN+SW 3X4
8	143-2-210T-09900	BRACKET
9	143-2-464T-16400	FIXER
or	143-2-464T-02700	FIXER
10	△ 143-0-236V-67530	POWER CORD
11	143-0-233V-63350	PW-2 ASSY
12	411 021 4005	SCR S-TPG BIN 3X12
13	143-2-322T-99100	EARTH PLATE
14	143-2-322T-99500	SHIELD PLATE
15	143-0-233V-63250	PW-1 ASSY
16	143-2-322T-99400	SHIELD PLATE
17	143-2-111T-11400	CABINET
18	412 024 7604	SPECIAL SCREW
19	143-2-853T-18800	SPRING PLATE
20	143-2-465T-13000	STOPPER
21	143-2-251T-02200	HINGE
22	143-2-210T-14000	BRACKET
23	143-0-233V-62000	VD-1 ASSY
24	411 021 4203	SCR S-TPG BIN 3X12
25	143-9-4300-84400	RF UNIT ASSY
26	143-0-233V-36222	TN-1 ASSY
27	4-115V-25500	TUNER ASSY
28	143-0-233V-49221	TN-2 ASSY
29	143-2-359T-03210	BRACKET TUNER,INCLUDE VD-1 ASSY
31	143-2-322T-98900	SHIELD PLATE
32	143-0-233V-62600	AD-1 ASSY
33	143-2-310T-08500	BRACKET

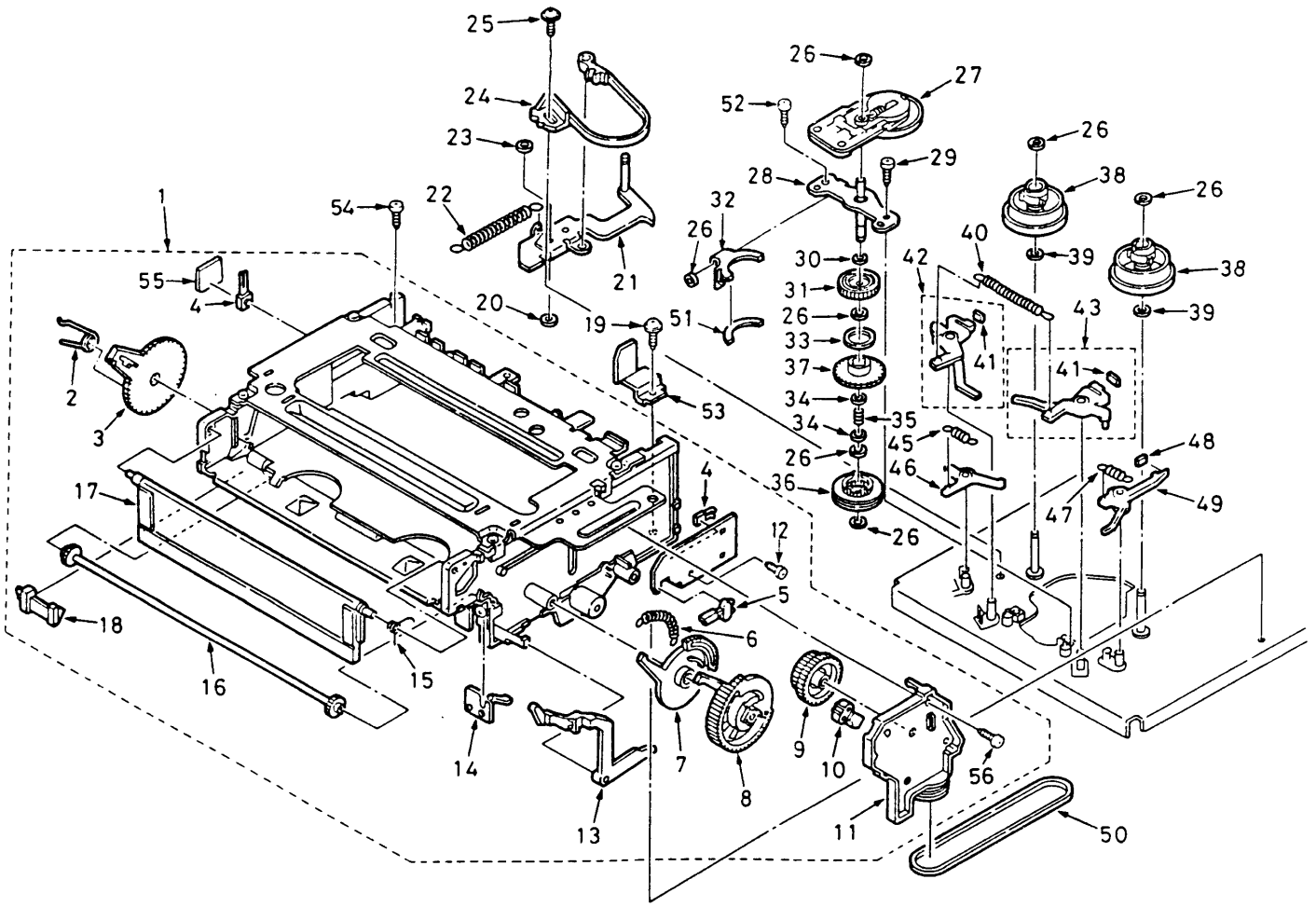
Ref No.	Part No.	Description
34	143-2-125T-09900	BOTTOM LID
35	143-0-233V-63650	DM-1 ASSY
36	143-0-233V-63700	DM-2 ASSY
37	143-2-377T-22800	BRACKET P C BOARD
38	143-0-233V-63800	DM-3 ASSY
39	143-0-233V-63950	DM-4 ASSY
40	143-0-233V-65800	DM-5 ASSY
43	143-0-233V-64400	SY-1 ASSY
44	143-0-233V-61900	TM-1 ASSY(VHR-D500G)
or	143-0-233V-61923	TM-1 ASSY(VHR-D500EX)
45	143-2-161T-82100	PUSH BUTTON,INCLUDE TM-4 ASSY
46	143-0-233V-61800	TM-4 ASSY
47	143-2-174T-02402	STAND
48	143-2-163T-08000	ROTARY KNOB
49	143-0-233V-49501	TM-5 ASSY
50	411 020 9100	SCR S-TPG BRZ+FLG 3X12
51	143-2-161T-81900	PUSH BUTTON
52	143-2-161T-81800	PUSH BUTTON
53	143-2-161T-81710	PUSH BUTTON
54	143-2-161T-82000	PUSH BUTTON
55	143-2-143T-84750	MARKING PLATE
56	143-2-152T-05251	SASH
57	143-2-143T-87000	MARKING PLATE
58	143-2-153T-23101	ESCUTCHEON
59	143-2-133T-28600	COMPARTMENT LID(VHR-D500G)
or	143-2-133T-28601	COMPARTMENT LID(VHR-D500EX)
60	143-2-142T-06600	BADGE
61	143-2-245T-00201	BACK PLATE
62	143-9-122T-27300	FRONT PANEL ASSY



MECHANISM PARTS 1

Ref No.	Part No.	Description
1	143-9-351T-80448	BRACKET MTG ASSY
2	143-2-851T-89900	SPRING COIL
3	143-2-581T-15600	GEAR
4	407 098 3201	PHOTO COUPLE PN150SAN
5	4-231V-86900	SPECIAL SWITCH
6	143-2-851T-89800	SPRING COIL
7	143-2-581T-15500	GEAR
8	143-2-581T-15400	GEAR
9	143-2-581T-15800	GEAR
10	4-231V-87100	SPECIAL SWITCH
11	143-0-351T-78300	BRACKET MTG ASSY
12	411 021 6405	SCR S-TPG BIN 3X8
13	143-2-741T-64500	LEVER
14	143-2-853T-18200	SPRING PLATE
15	143-2-851T-90000	SPRING COIL
16	143-0-751T-99200	SHAFT ASSY
17	143-2-133T-28231	COMPARTMENT LID
18	4-231V-87000	SPECIAL SWITCH
19	411 036 3208	SCR PAN-SW-W 3X10
20	412 012 8309	SPECIAL WASHER
21	143-0-741T-65200	LEVER ASSY
22	143-2-851T-87701	SPRING COIL
23	412 021 4903	SPECIAL WASHER
24	143-0-711T-02101	BRAKE BAND ASSY
25	411 046 9702	SCR PAN-SW-W 3X6
26	412 015 9600	SPECIAL WASHER
27	143-0-662T-15621	ROLLER ASSY REEL DRIVE
28	143-0-351T-76900	BRACKET MTG ASSY
29	411 023 4201	SCR S-TPG PAN 3X10
30	412 015 8900	SPECIAL WASHER
31	143-2-661T-72800	PULLEY

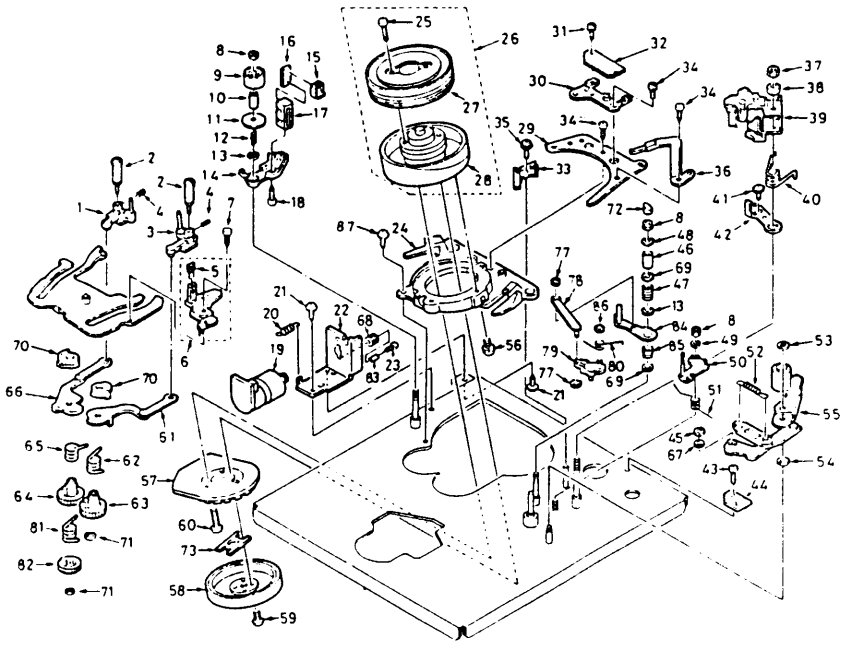
Ref No.	Part No.	Description
32	143-2-741T-62100	LEVER
33	412 024 8601	SPECIAL WASHER 0.5T
34	412 015 8702	SPECIAL WASHER
35	143-2-851T-86800	SPRING COIL 0.5T
36	143-2-661T-72701	PULLEY
37	143-2-581T-13700	GEAR
38	143-0-531T-05421	REEL PLATE ASSY
39	412 015 8504	SPECIAL WASHER D3.1XD6X0.5T
or	412 015 8603	SPECIAL WASHER D3.1XD6X0.25T
or	412 015 8702	SPECIAL WASHER D3.1XD6X0.13T
or	412 015 8801	SPECIAL WASHER 0.2T
or	412 015 8900	SPECIAL WASHER 3.1X6X0.4T
or	412 021 5306	SPECIAL WASHER D3.1XD6X0.3T
40	143-2-851T-87600	SPRING COIL
41	143-2-712T-05200	BRAKE SHOE
42	143-0-741T-62200	LEVER ASSY
43	143-0-741T-62300	LEVER ASSY
45	143-2-851T-92501	SPRING COIL
46	143-2-741T-63400	LEVER
47	143-2-851T-92100	SPRING COIL
48	143-2-712T-05501	BRAKE SHOE
49	143-2-741T-62600	LEVER
50	143-2-564T-05300	BELT FLONT LOADING
51	143-2-246T-45500	SHEET
52	411 023 9800	SCR S-TPG PAN 3X8
53	143-2-351T-80200	BRACKET MTG
54	411 047 7905	SCR PAN-FLG 3X7
55	143-2-135T-32900	COVER
56	411 021 3503	SCR S-TPG BIN 3X10



MECHANISM PARTS 2

Ref No.	Part No.	Description
1	143-0-822T-03021	BRACKET TAPE GUIDE ASSY
2	143-0-821T-14400	TAPE GUIDE ASSY
or	143-0-821T-14500	TAPE GUIDE ASSY
3	143-0-822T-03121	BRACKET TAPE GUIDE ASSY
4	411 063 0706	SCR SET HEX-SCT 2X2
5	407 094 2000	LED LN59-SAN
6	143-0-351T-79201	BRACKET MTG ASSY
7	412 021 1209	SPECIAL SCREW
8	412 015 8306	SPECIAL NUT
9	143-2-662T-15400	ROLLER
10	143-2-681T-17501	SLEEVE
or	143-2-681T-17500	SLEEVE
11	412 023 2105	WASHER F 3X18X2
12	143-2-851T-91300	SPRING COIL
13	412 024 8502	SPECIAL WASHER
14	143-2-741T-63700	LEVER
15	4-235V-46502	SOCKET
16	4-233V-26300	P C BOARD
17	4-242V-24700	MAGNETIC HEAD
18	411 002 4901	SCR PAN 2X4
19	4-527V-03010	COMMUTATE MOTOR
20	143-2-851T-89200	SPRING COIL
21	411 047 6809	SCR PAN+FLG 3X4
or	411 047 8100	SCR PAN+FLG 3X8
22	143-2-378T-02901	BRACKET MOTOR
23	411 047 7509	SCR PAN+FLG 3X6
24	143-2-776T-02500	BRACKET CYLINDER
or	143-2-776T-02520	BRACKET CYLINDER
25	411 037 6208	SCR PAN+W 3X8
26	143-0-771T-13920	CYLINDER ROTARY HEAD ASSY
27	143-0-771T-13900	CYLINDER ROTARY HEAD ASSY
28	143-0-771T-08900	CYLINDER ROTARY HEAD ASSY
29	143-2-351T-77500	BRACKET MTG
30	143-2-377T-21700	BRACKET P C BOARD
31	411 003 8809	SCR PAN+SW 2.6X6
32	143-0-233V-35500	MC30 ASSY
33	143-2-351T-80000	BRACKET MTG
or	143-2-351T-80001	BRACKET MTG
34	411 003 8908	SCR PAN+SW 3X6
35	411 020 9902	SCR S-TPG BRZ+FLG 3X8
or	411 020 8905	SCR S-TPG BRZ+FLG 3X10
36	143-0-324T-00925	EARTH PLATE ASSY
37	412 015 8207	SPECIAL NUT
38	143-2-352T-22800	SPACER
39	143-9-242V-27500	MAGNETIC HEAD ASSY
40	143-2-851T-89500	SPRING COIL
41	411 036 5301	SCR PAN+SW+W 3X6

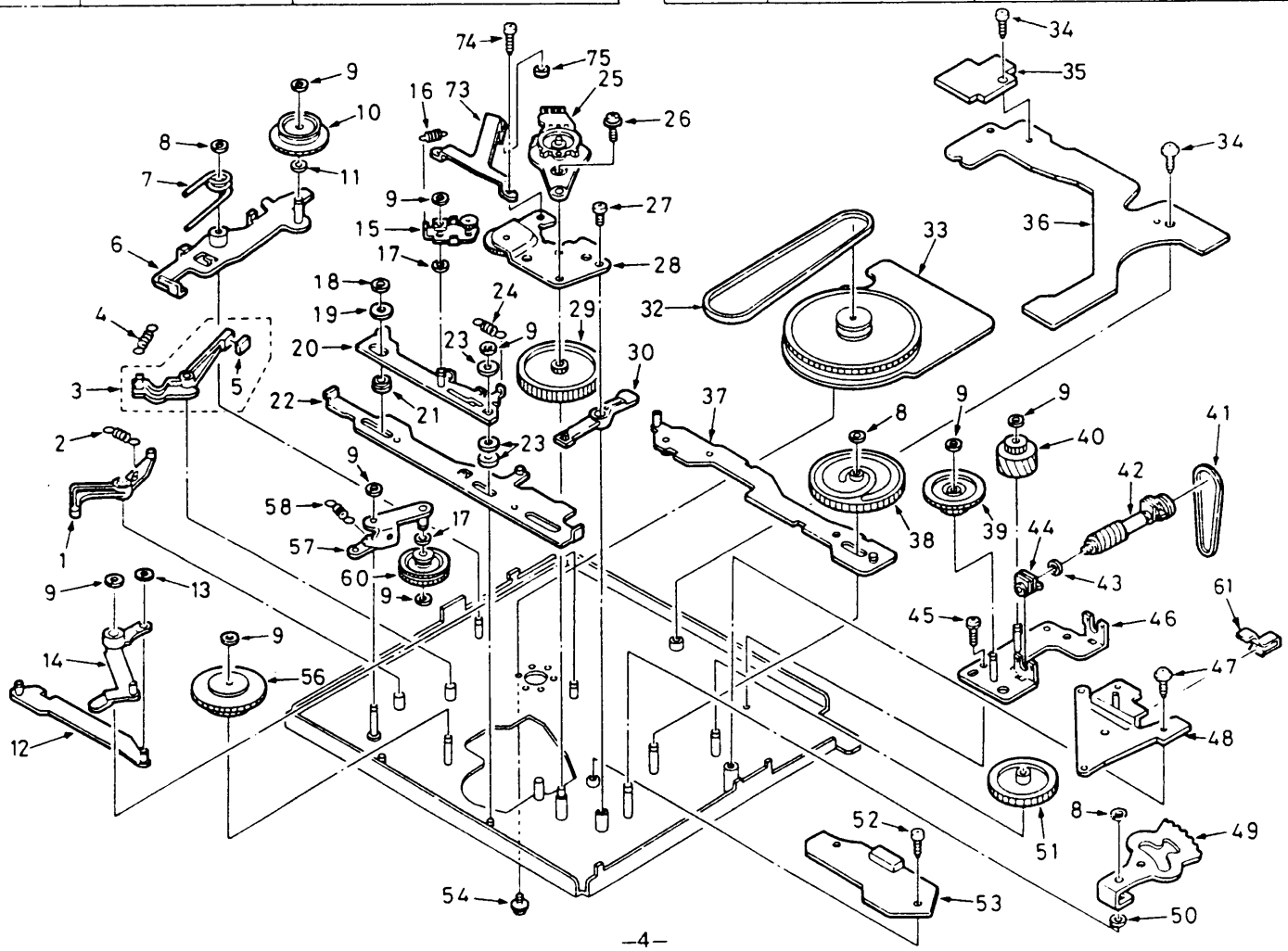
Ref No.	Part No.	Description
42	143-2-375T-11000	BRACKET HEAD
43	411 046 9702	SCR PAN+SW+W 3X6
44	4-221V-18900	RESISTOR
45	412 021 4903	SPECIAL WASHER
46	143-2-821T-14100	TAPE GUIDE
47	143-2-851T-91300	SPRING COIL
48	412 023 1900	WASHER F 3X6.5X0.5
49	412 015 8504	SPECIAL WASHER
50	143-0-741T-63300	LEVER ASSY
51	143-2-851T-87900	SPRING COIL
52	143-2-851T-87800	SPRING COIL
53	412 021 5207	SPECIAL WASHER
54	412 012 9108	SPECIAL WASHER
55	143-0-545T-02830	LEVER PINCH ROLLER ASSY
56	411 045 5408	SCR PAN+SW 3X5
57	4-264V-17400	MAGNETIC COIL
58	143-2-774T-03110	ROTOR
59	411 044 9001	SCR PAN+SW 2.3X6
60	411 044 8301	SCR PAN+SW 2.3X10
61	143-0-741T-64122	LEVER ASSY
62	143-2-851T-89000	SPRING COIL
63	143-2-581T-15200	GEAR
64	143-2-581T-16400	GEAR
65	143-2-851T-90700	SPRING COIL
66	143-0-741T-64222	LEVER ASSY
67	412 012 8309	SPECIAL WASHER
68	143-2-445T-21300	RUBBER CUSHION
69	412 021 7102	SPECIAL WASHER
or	412 021 8901	SPECIAL WASHER
70	143-2-352T-23500	SPACER
71	411 000 9908	RING E 3
72	143-2-681T-21100	SLEEVE
73	143-2-352T-23300	SPACER
77	412 015 9600	SPECIAL WASHER
78	143-0-741T-66000	LEVER ASSY
79	143-0-741T-66100	LEVER ASSY
80	143-2-851T-91200	SPRING COIL
81	143-2-851T-90800	SPRING COIL
82	143-2-581T-16500	GEAR
83	143-2-352T-24700	SPACER
84	143-0-741T-65900	LEVER ASSY
85	143-2-851T-92400	SPRING COIL
86	412 023 2006	WASHER F 3X9.5X0.5
87	411 047 5307	SCR PAN+FLG 3X10



MECHANISM PARTS 3

Ref No.	Part No.	Description
1	143-2-741T-62501	LEVER
2	143-2-851T-88800	SPRING COIL
3	143-0-741T-65100	LEVER ASSY
4	143-2-851T-92600	SPRING COIL
5	143-2-712T-05301	BRAKE SHOE
6	143-0-741T-65800	LEVER ASSY
7	143-2-851T-91100	SPRING COIL
8	412 021 4903	SPECIAL WASHER
9	412 015 9600	SPECIAL WASHER
10	143-0-581T-15000	GEAR ASSY
11	412 012 7708	SPECIAL WASHER
or	412 015 8504	SPECIAL WASHER
12	143-0-741T-65600	LEVER ASSY
13	412 015 9501	SPECIAL WASHER
14	143-0-741T-65700	LEVER ASSY
15	143-0-741T-62921	LEVER ASSY
16	143-2-851T-87500	SPRING COIL
17	412 015 8504	SPECIAL WASHER
18	412 021 4903	SPECIAL WASHER 0.6T
19	412 021 6105	SPECIAL WASHER
20	143-0-731T-16300	SLIDE ASSY
21	143-2-681T-19800	SLEEVE
22	143-0-731T-16400	SLIDE ASSY
23	412 023 1801	WASHER F 3.2X10X0.5
24	143-2-851T-87400	SPRING COIL
25	4-231V-87400	SPECIAL SWITCH
26	411 036 2805	SCR PAN+SW+W 2.6X6
27	411 024 4101	SCR S-TPG PAN+FLG 2.6X6
28	143-0-581T-14300	GEAR ASSY
29	143-2-581T-16100	GEAR
30	143-2-741T-63600	LEVER
32	143-2-564T-05001	BELT REEL DRIVE

Ref No.	Part No.	Description
33	4-527V-54301	BRUSHLESS MOTOR VP0547
34	411 023 4003	SCR S-TPG PAN 3X10
35	143-2-210T-09600	BRACKET
36	143-0-233V-26750	MC2 ASSY
37	143-0-731T-16600	SLIDE ASSY
38	143-2-581T-16000	GEAR
39	143-2-581T-14600	GEAR
40	143-2-581T-14500	GEAR
41	143-2-564T-04900	BELT TAPE LOADING
42	143-0-581T-14400	GEAR ASSY
43	412 012 7708	SPECIAL WASHER
44	143-2-681T-19900	SLEEVE
45	411 045 6702	SCR PAN+SW 3X8
46	143-0-351T-77200	BRACKET MTG ASSY
47	411 024 4309	SCR S-TPG PAN+FLG 2.6X8
48	143-2-351T-79600	BRACKET MTG
49	143-0-581T-16300	GEAR ASSY
50	412 012 8309	SPECIAL WASHER
51	143-2-581T-14700	GEAR
52	411 023 9800	SCR S-TPG PAN 3X8
53	143-0-233V-26621	MC1 ASSY
54	411 047 6809	SCR PAN+FLG 3X4
56	143-0-581T-14001	GEAR ASSY
57	143-0-741T-62800	LEVER ASSY
58	143-2-851T-87300	SPRING COIL
60	143-0-581T-13801	GEAR ASSY
61	143-2-324T-01000	EARTH PLATE
73	143-2-310T-09300	BRACKET
74	411 024 4309	SCR S-TPG PAN+FLG 2.6X8
75	411 102 9905	WASHER Y 3.2X8X1



BLOCK DIAGRAMS, CIRCUIT DIAGRAMS & PRINTED CIRCUIT BOARDS

VHR-D500G (West Germany)
VHR-D500EX (Europe)

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————	DIGITAL PROCESSING CIRCUIT BLOCK DIAGRAM	Ⓓ
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P.C.B. VD-1	VIDEO & TUNER	Ⓕ
P.C.B. VD-1	VIDEO CIRCUIT	
————	WAVEFORM OF VIDEO	
————	HIC 1001	Ⓖ
————	HIC 1201	
P.C.B. VD-1	TUNER CIRCUIT	
P.C.B. VP-1	VIDEO PRE-AMP CIRCUIT & P.C.B.	
P.C.B. TN-2	TUNING CONTROL CIRCUIT & P.C.B.	
P.C.B. TN-1	TUNER IF CIRCUIT & P.C.B.	Ⓗ
P.C.B. SY-1	SERVO CIRCUIT	
————	WAVEFORM OF SERVO	
P.C.B. SY-1	SYSTEM CONTROL & SERVO	Ⓘ
P.C.B. SY-1	SYSTEM CONTROL & CIRCUIT	
————	RF CONVERTER	Ⓙ
P.C.B. DM-3	SYNC. SEPARATOR CIRCUIT & P.C.B.	
P.C.B. DM-5	DIGITAL VIDEO	
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P.C.B. TM-4	DISPLAY, TIMER & SWITCH	Ⓛ
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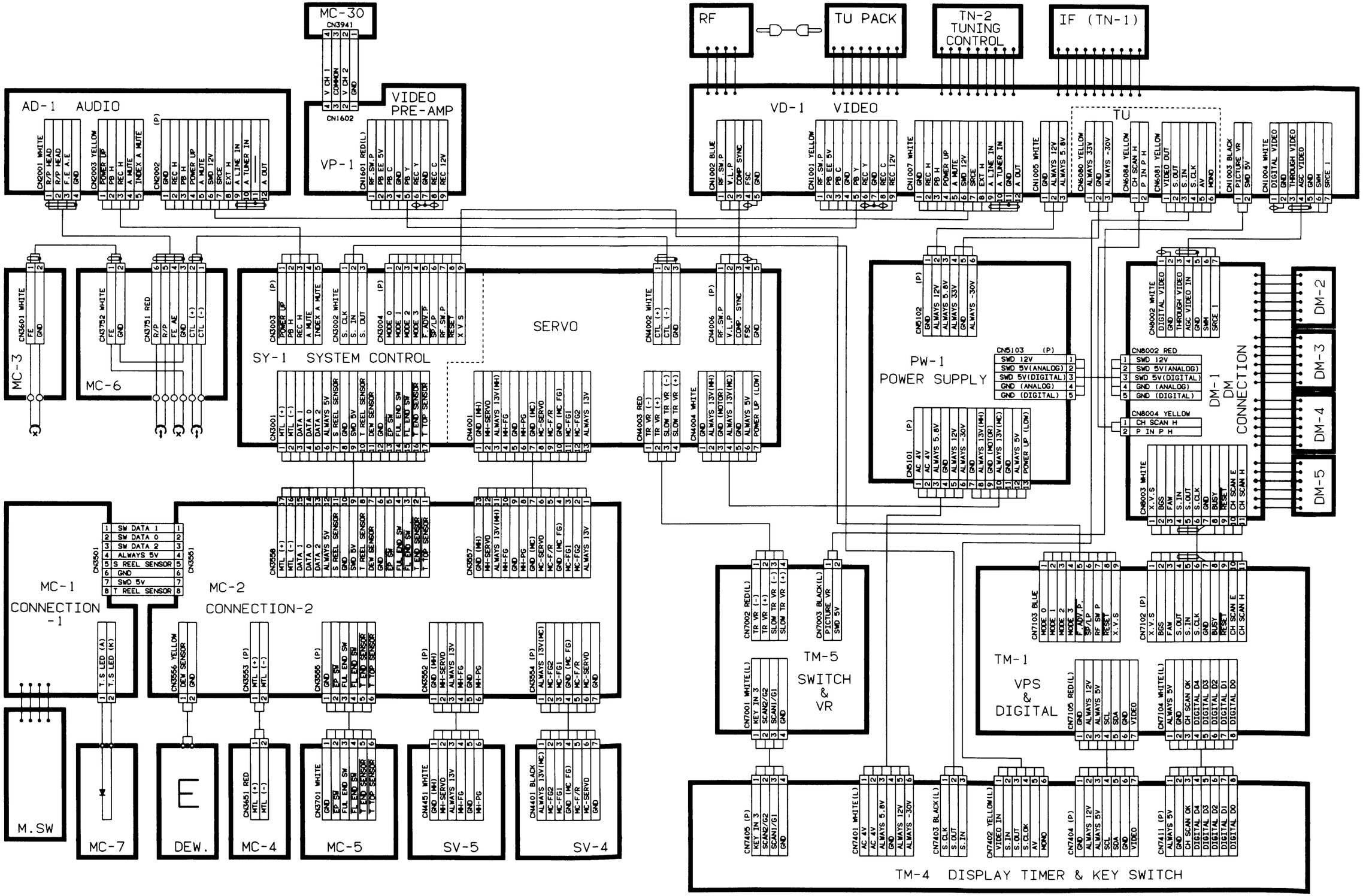
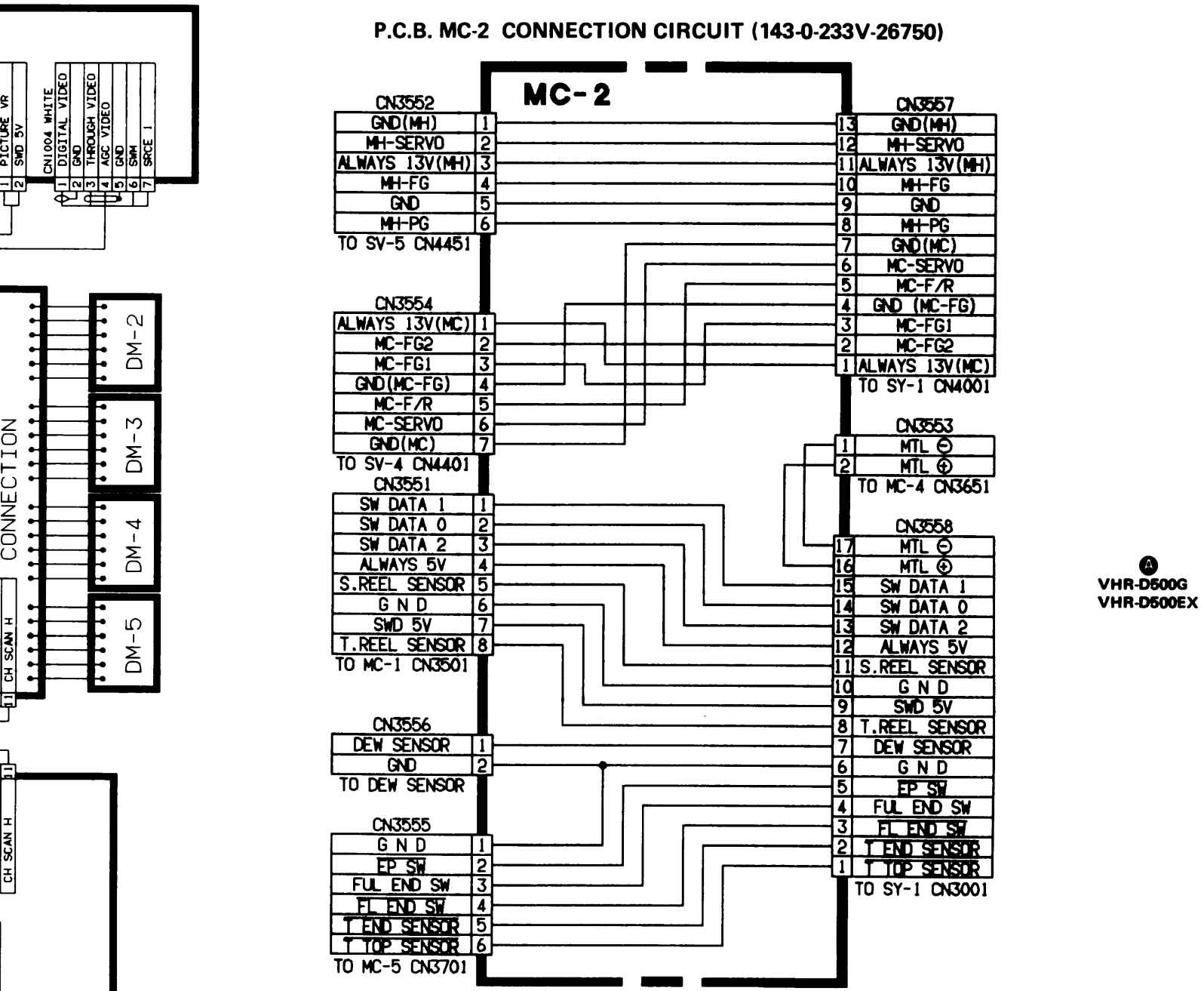
P.C.B. DM-2	REC/PB VIDEO SIGNAL PROCESS CIRCUIT & P.C.B.	
P.C.B. DM-4	Y/N SIGNAL PROCESS	
P.C.B. DM-4	Y/N SIGNAL PROCESS CIRCUIT	Ⓜ
P.C.B. AD-1	AUDIO CIRCUIT & P.C.B.	Ⓝ
P.C.B. PW-1.2	POWER SUPPLY CIRCUIT & P.C.B.	

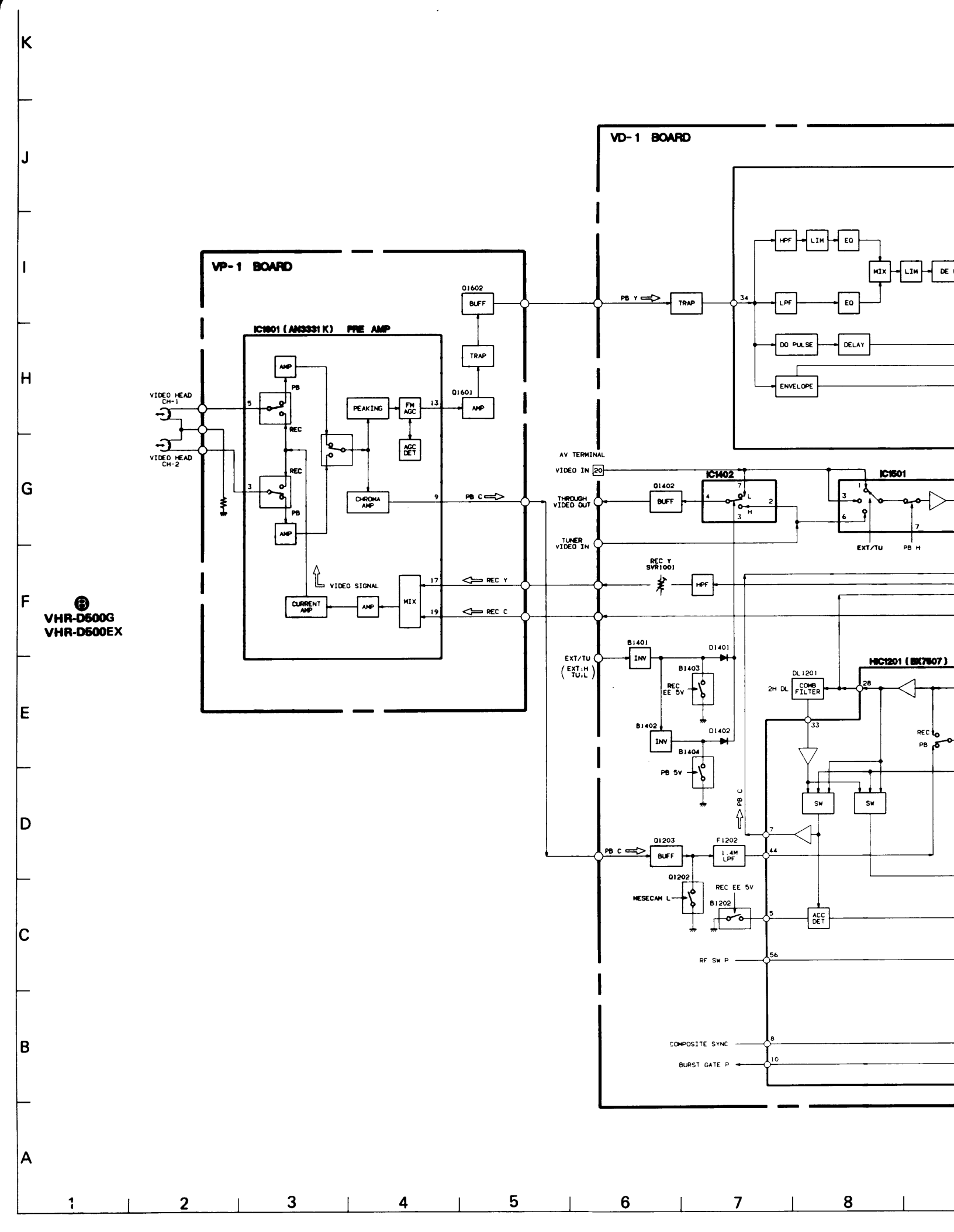
OVERALL WIRING DIAGRAM



P.C.B. MC-2 CONNECTION CIRCUIT (143-0-233V-26750)

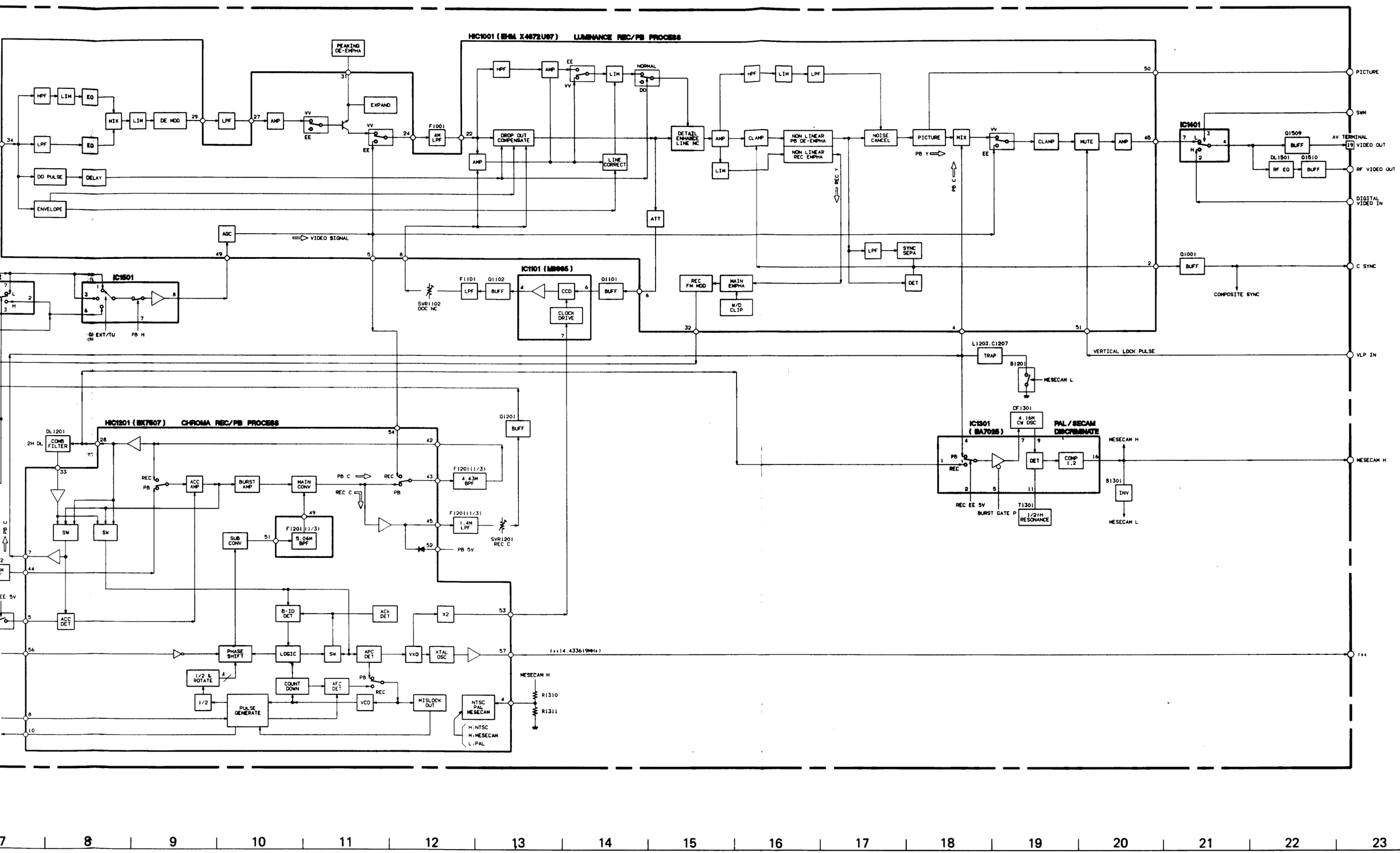


Ⓐ
VHR-D500G
VHR-D500EX



B
VHR-D500G
VHR-D500EX

VIDEO CIRCUIT BLOCK DIAGRAM



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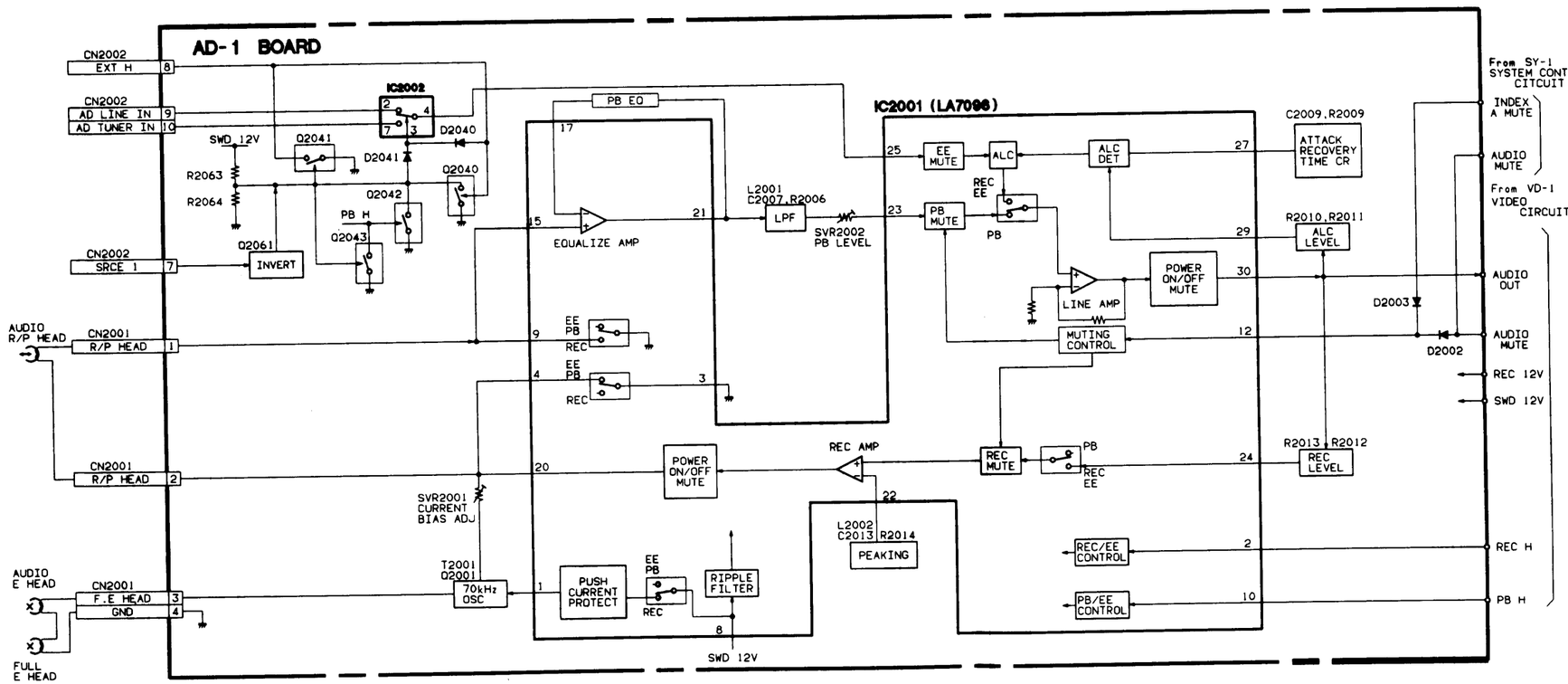
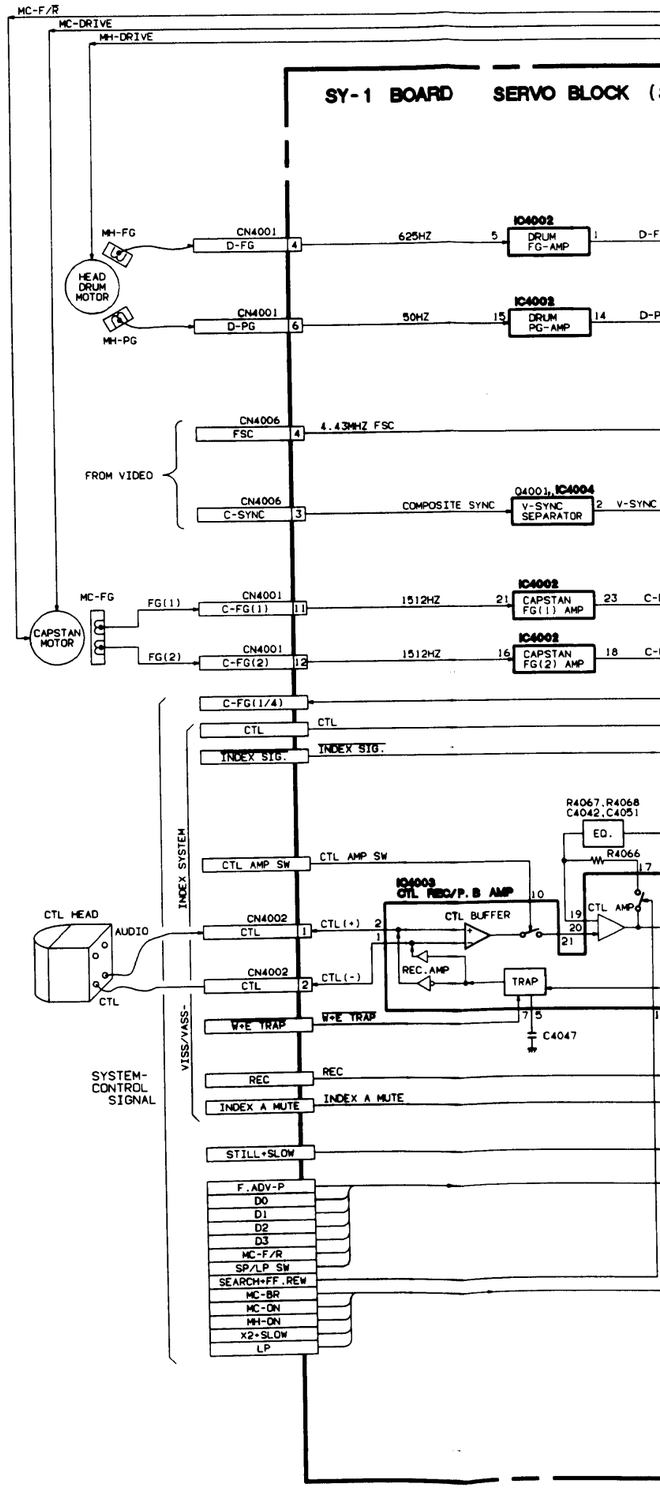
AUDIO CIRCUIT BLOCK DIAGRAM





SERVO CIRCUIT BLOCK DIAGRAM

SY-1 BOARD SERVO BLOCK (SV)

IC4001 DIGITAL SERVO IC

CN4001 D-FG 4 — 625HZ — IC4002 DRUM FG-AMP 5 → 1 D-FG → 18 D-FG → DIGITAL COMPARATOR / PWM GEN (DRUM SPEED CONTROL) → DSE 19 → D.S.E → R4027,R4028 C4021,C4022 D/A CONVERTOR (L.P.F) → D.S.E → IC4002 OP.AMP 9 / 8 → 7 DRUM DRIVE → CN4001 2 MH-VS → TO MH

CN4001 D-PG 6 — 50HZ — IC4002 DRUM PG-AMP 15 → 14 D-PG → 17 D-PG → PG-DELAY RF-SW-P → COMP / REF → DIGITAL COMPARATOR / PWM GEN (DRUM PHASE CONTROL) → DPE 20 → D.P.E → R4025,R4027 C4018-R4020 D/A CONVERTOR (L.P.F) → D.P.E → IC4002 OP.AMP 10 / 11

SWITCHING POSITION ADJ. — SVR4001 → 15 CH-1; SVR4002 → 14 CH-2

MH-ON D4014

CN4006 FSC 4 — 4.43MHZ FSC → 1 FSC-IN → CLOCK GEN. → CLOCK

2H DL — AF-HEAD-SW — MODE

4 HEAD-SW (H-AMP-SW) ROTARY → RF-SWITCHING PULSE 7; HEAD AMP-SW 6; ROTARY 5; AF-HEAD-SW 8

RF SW-P → TO SYSCON

CN4006 1 RF.SW-P / 2 AF.SW-P → TO VIDEO

CN4007 (H1-F1 MODEL ONLY)

CN4006 C-SYNC 3 — COMPOSITE SYNC — Q4001,IC4004 V-SYNC SEPARATOR → 2 V-SYNC → 2 SYNC → V-SYNC SEPARATOR → NOISE INH (CLK) → REF GEN (CLK, MODE)

REF SW (2 / 1 / 1/N, MODE)

B4001 X2+SLOW — SVR4006 — SVR4003

CN4001 C-FG(1) 11 — 1512HZ — IC4002 CAPSTAN FG(1) AMP 21 → 23 C-FG(1) → 25 C-FG(1) → S.PB DIVIDER → C-FG → DIGITAL COMPARATOR / PWM GEN (CAPSTAN SPEED CONTROL) → C.S.E 22 → C.S.E → R4002,R4003 C4001,C4002 D/A CONVERTOR (L.P.F) → C.S.E → IC4002 OP.AMP 10 / 11

CN4001 C-FG(2) 12 — 1512HZ — IC4002 CAPSTAN FG(2) AMP 16 → 18 C-FG(2)

REC-CTL → 13 REC-CTL(REF TRK) → REC-CTL PULSE → TRACKING DELAY → TR 32 → CN4003 1 TRACK ⊖

REF 25 9

TRACK ⊕ → TRACKING VR.

R4033

C-FG(1/4) → 35 1/4FG → 1/4 DIVIDER → CAPSTAN REF-GEN → PB / EDIT / COMP / REC

CTL → 12 CTL-IN → S.PB DIVIDER (CTL) → FG25 DIVIDER → FG25 → REC / REF / PB

INDEX SIG. — D4009 — REC-CTL (INDEX SIG.)

R4067,R4068 C4042,C4051 — EQ. — R4066

CTL AMP SW

IC4003 CTL REC/P.B AMP: CTL BUFFER, CTL AMP, AGC AMP, REC.AMP, TRAP, AGC, AGC DET, REC-CTL, PB, REC

CN4002 CTL 1 — CTL(+) 2 — CTL BUFFER

CN4002 CTL 2 — CTL(-) — REC.AMP

W•E TRAP — C4047

REC

INDEX A MUTE — D4011 — D4010

STILL+SLOW

F.ADV-P — 26 C-FG(2); 41 F.ADV-P → FRAME ADVANCE CONTROL (STILL.SLOW.F-ADV) → C-STR/STP 21; F/R OUT 24

D0 — 30 SP/LP; 36 MC-F/R; 40 D0; 39 D1; 38 D2; 37 D3 → MODE CONTROL → MODE → RF-SW-PULSE → DUMMY V-SYNC GENERATION (V-LOCK PULSE) → DL-1 11; DL-2 10; VD PULSE 4 → (MODE DATA)

D1

D2

D3

MC-F/R

SP/LP SW

SEARCH+FF.REW

MC-BR — D4001

MC-ON — D4004; D4005

MH-ON

X2+SLOW

LP

TAPE SPEED DETECTOR (CTL, C-FG, SP/LP) → SP 27; LP 29; EP

SLOW TRACKING (CTL) → SLOW TRACKING CONTROL → SLOW TRACKING 31

SLOW CAPSTAN SPEED

SVR4005 SLOW SUB TRACKING — SLOW DRIVE

SP/LP → TO SYSCON

LP H → TO VIDEO

CN4007 (H1-F1 MODEL ONLY)

CN4003 4 SL TRACK → SLOW TRACKING VR.

CN4001 9 MC-F/R → TO MC

R4030,C4025 VD-PULSE TIME CONSTANTS CR.

B4002 SW

CN4006 2 VD-OUT → TO VIDEO

IC4004 D4012,D4013 X2 CIRCUIT — B4003

X VS → TO SYSCON

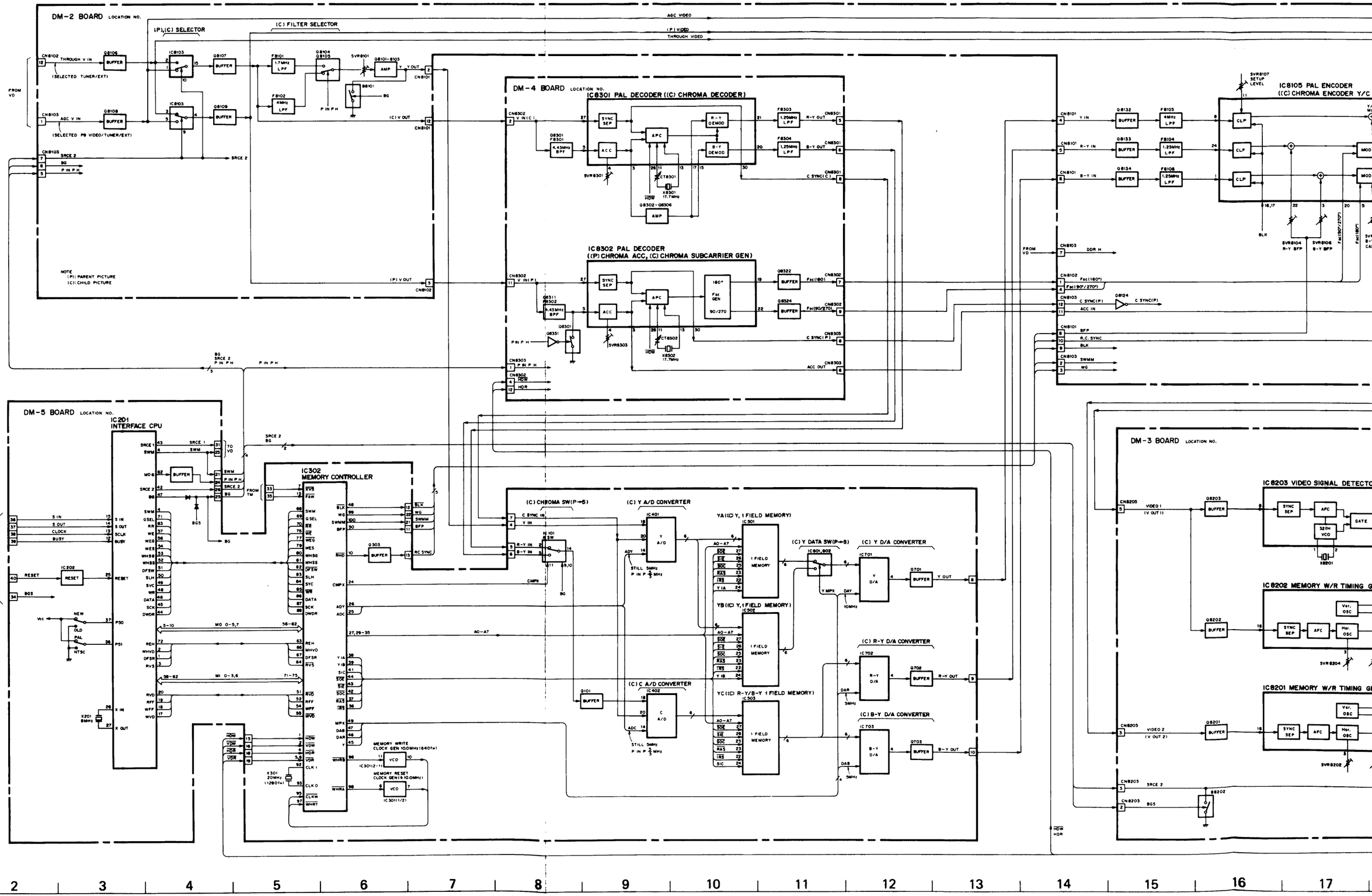
CN4001 8 MC-VS → TO MC

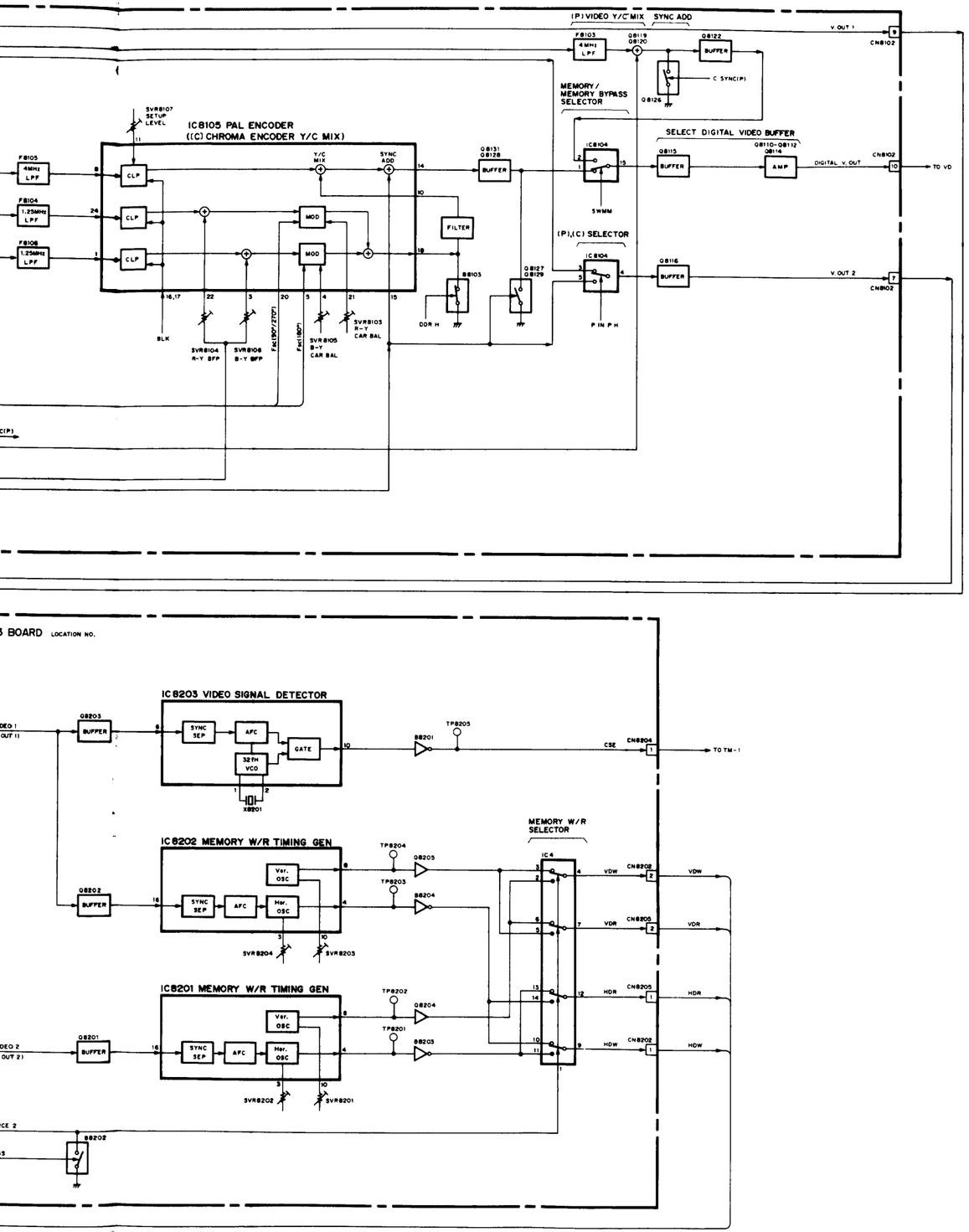
VHR-D500G
VHR-D500EX

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

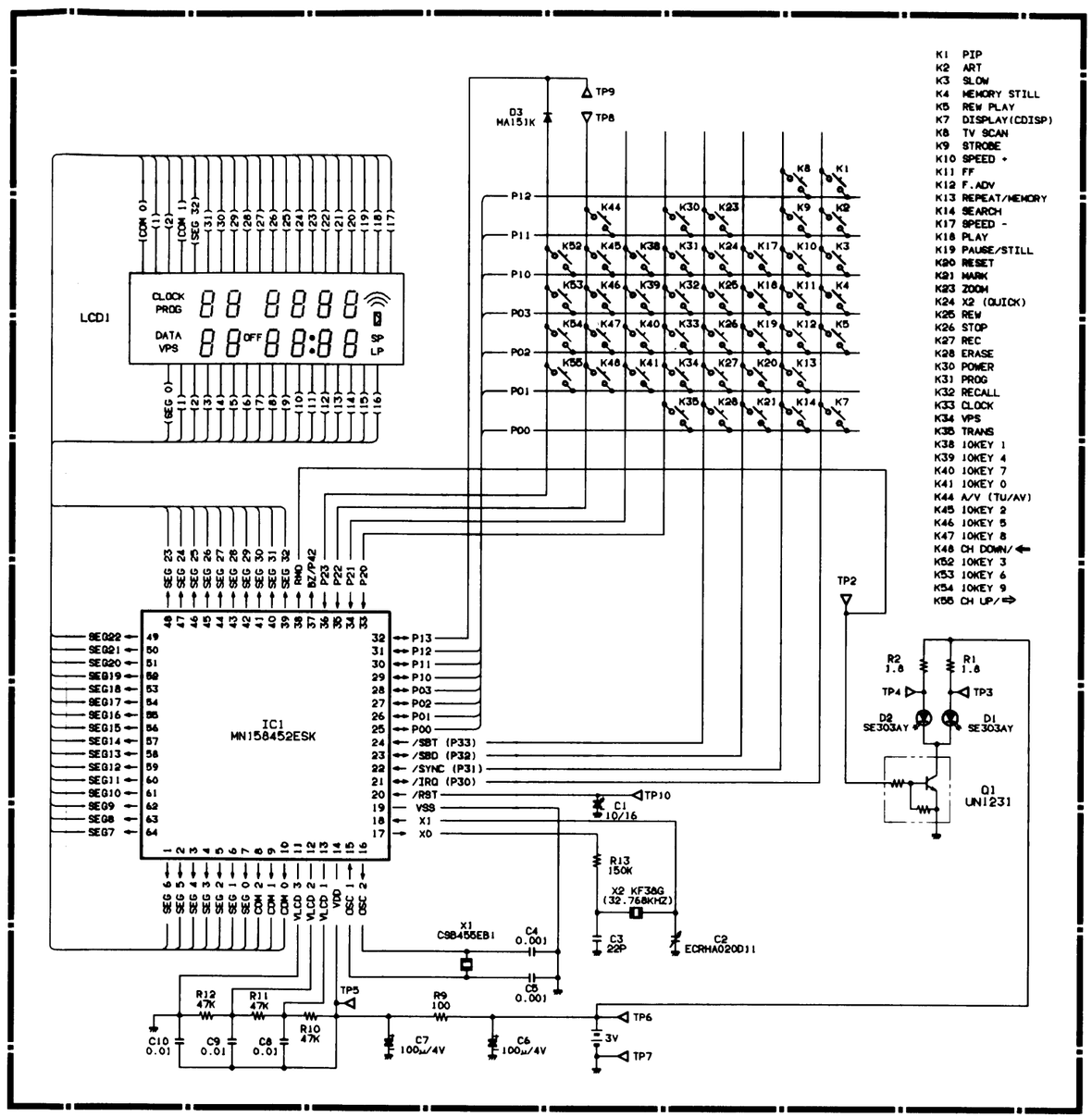
DIGITAL PROCESSING CIRCUIT BLOCK DIAGRAM

D
VHR-D500G
VHR-D500EX

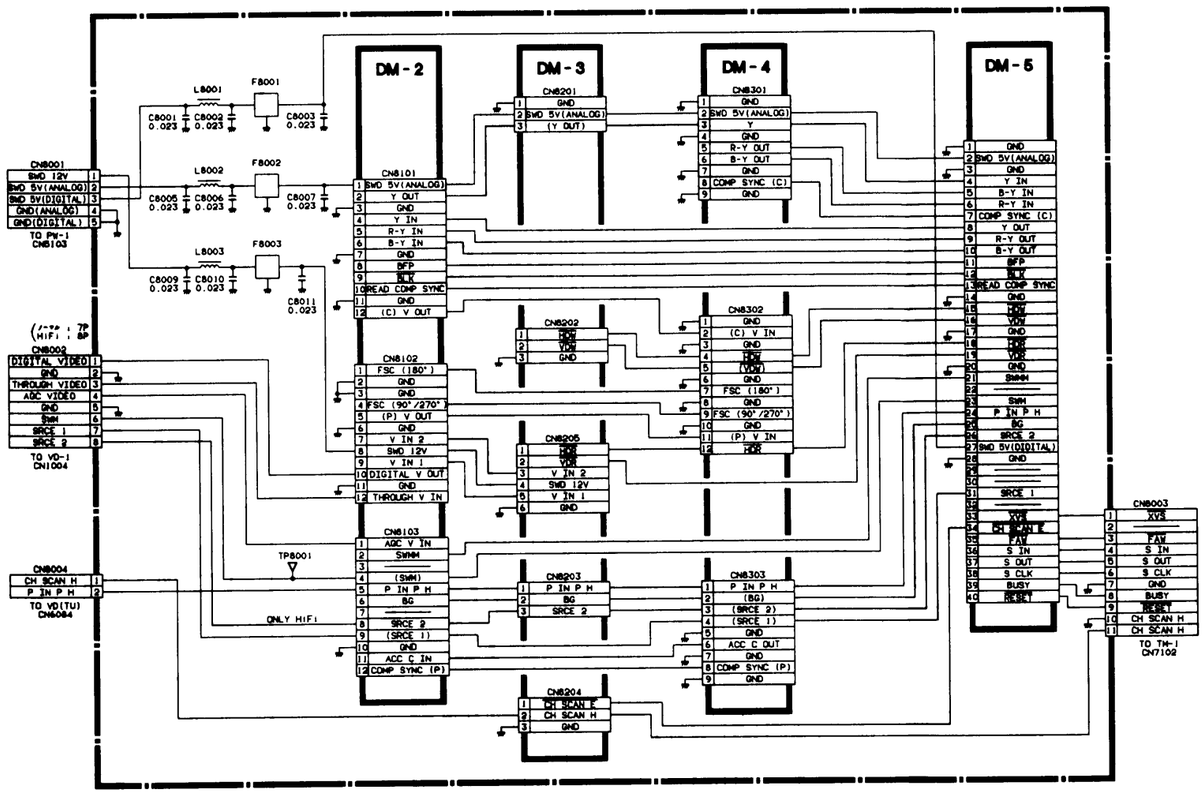


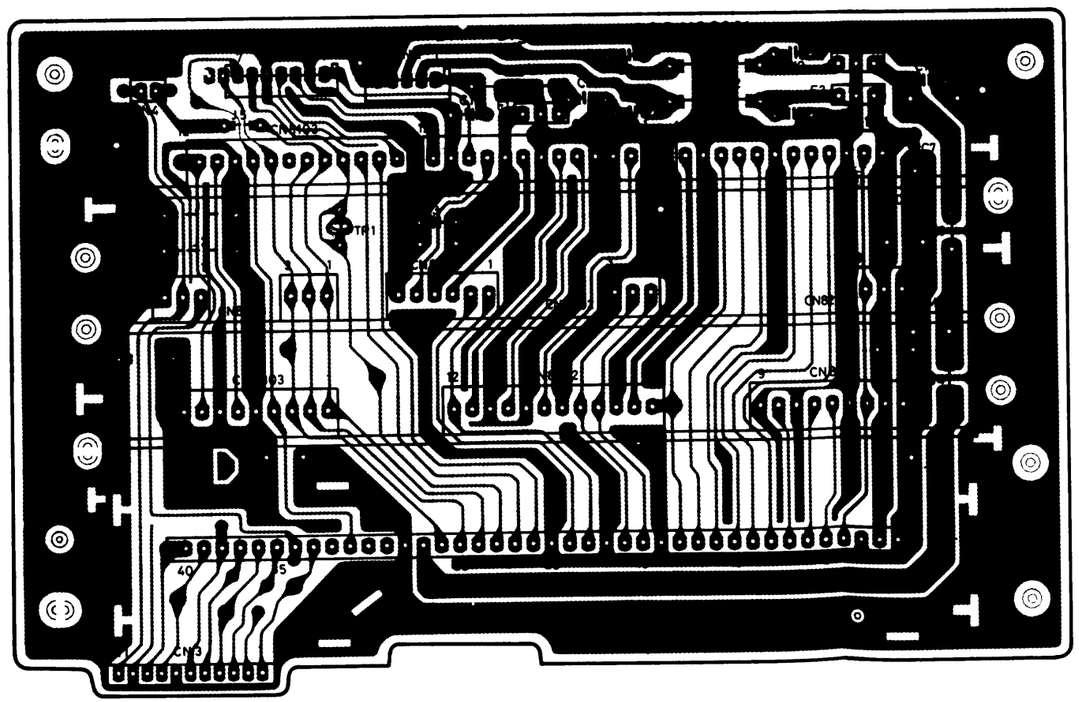


IR REMOTE CONTROL CIRCUIT (143-9-4100-68920)

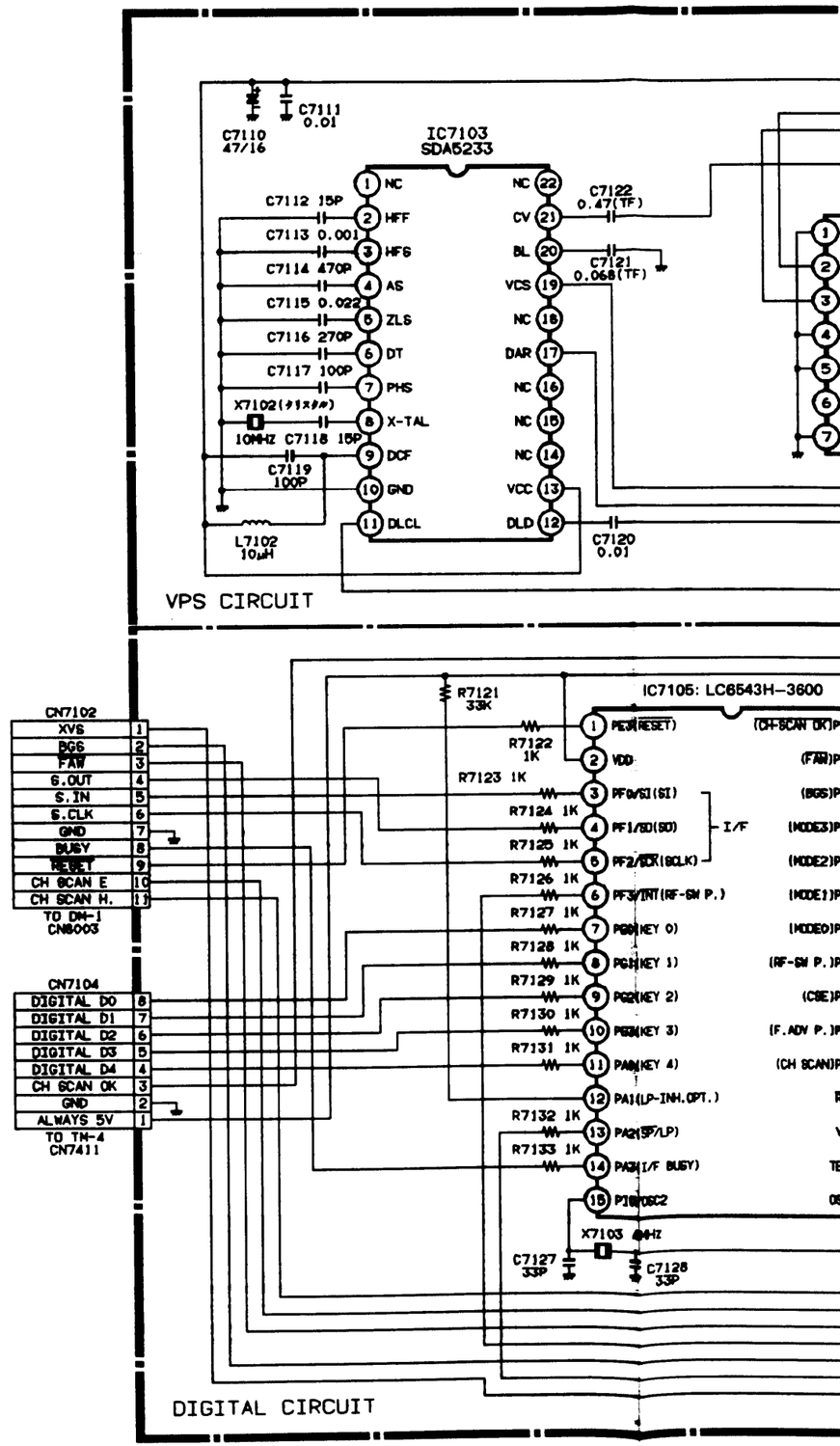


P.C.B. DM-1 DM CONNECTION & P.C.B. (143-0-233V-63650)

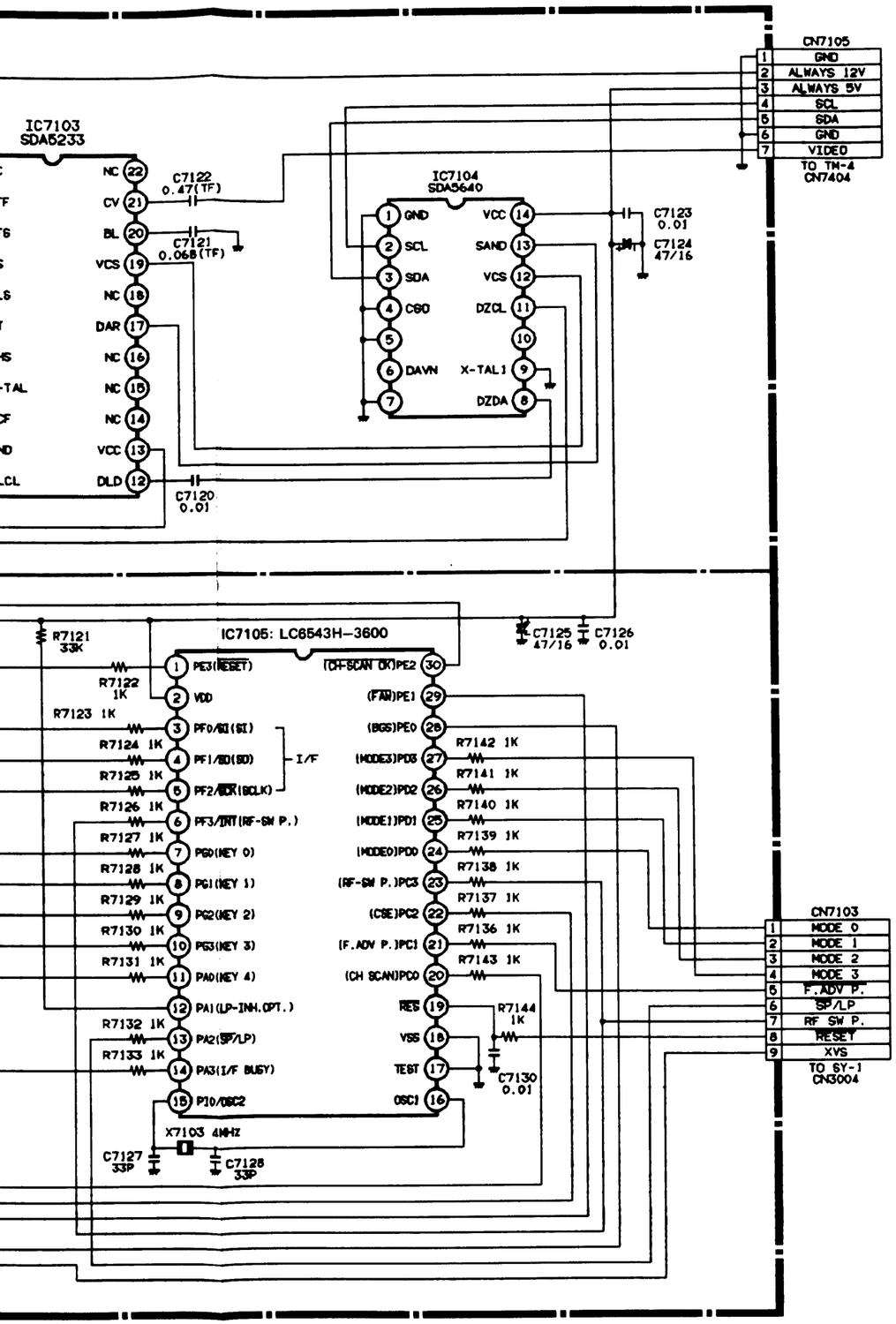




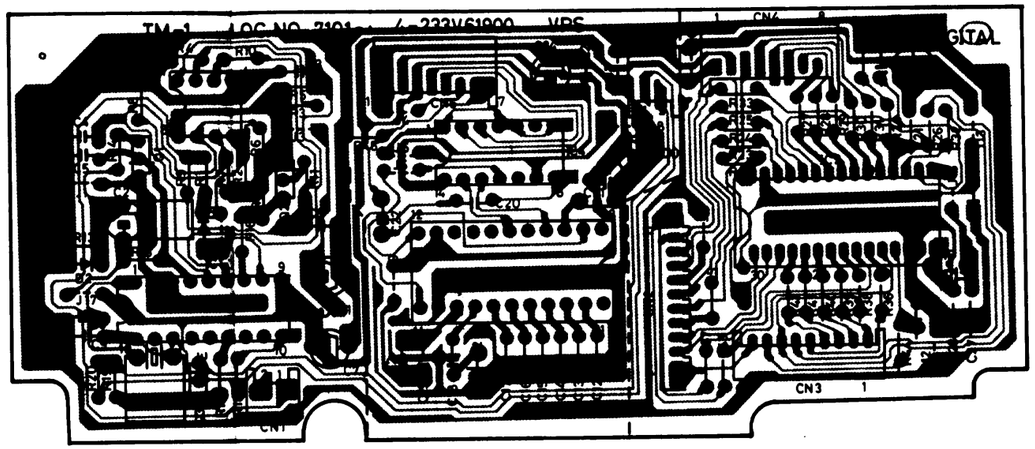
P.C.B. TM-1 VPS & DIGITAL CIRCUIT (143



P.C.B. TM-1 VPS & DIGITAL CIRCUIT (143-0-233V-61900)

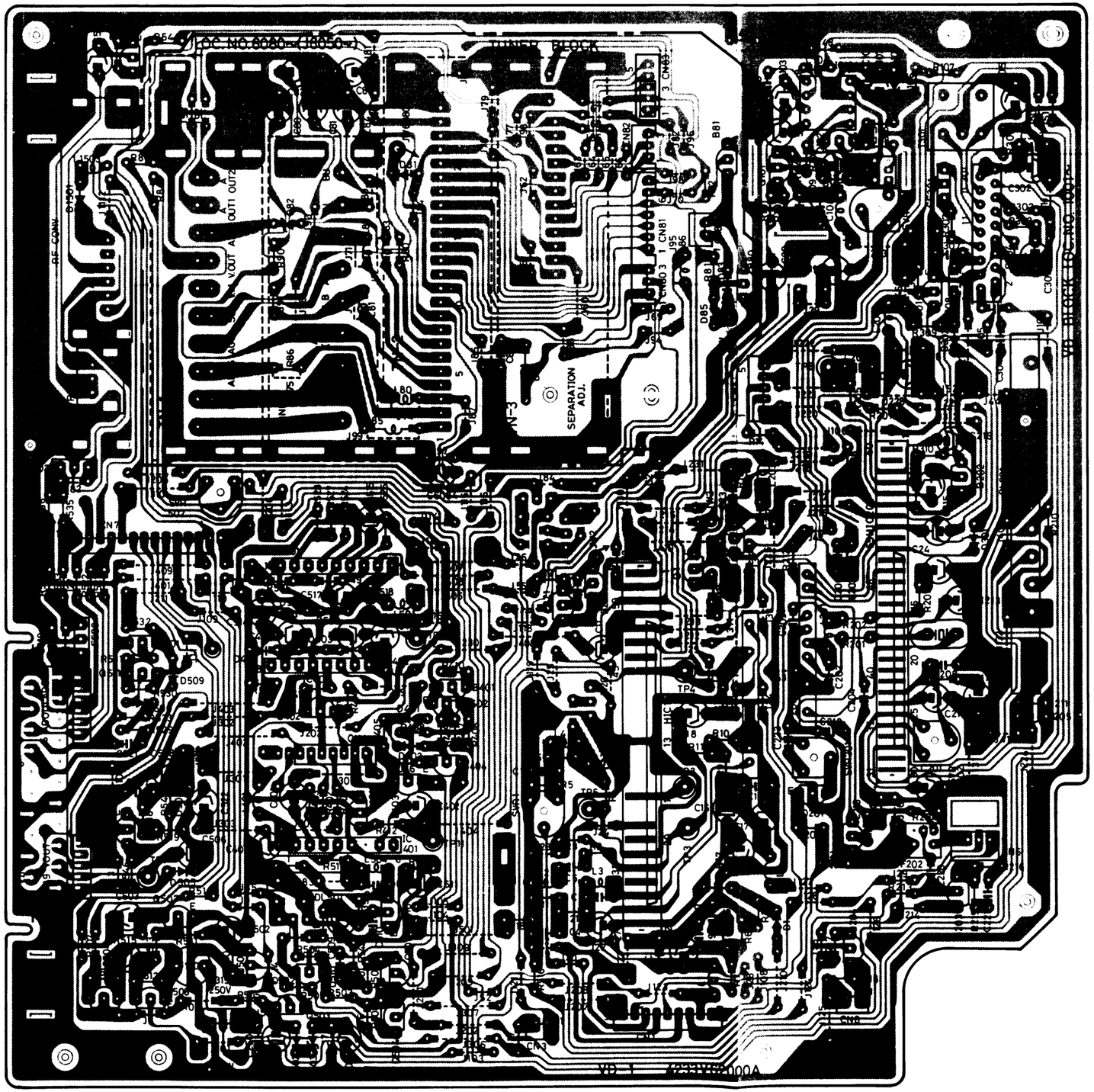


P.C.B. TM-1 VPS & DIGITAL (1143-0-233V-61900)

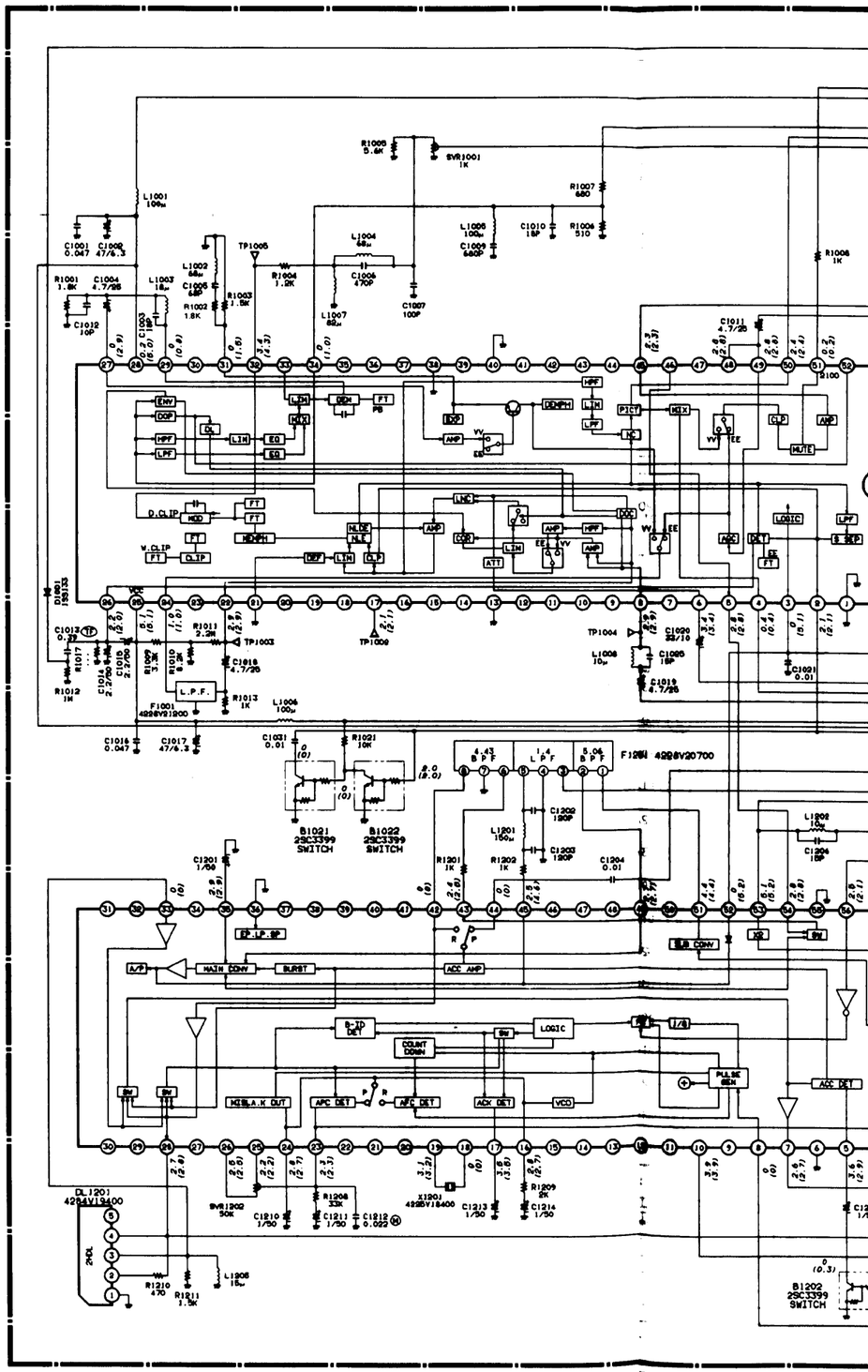


15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

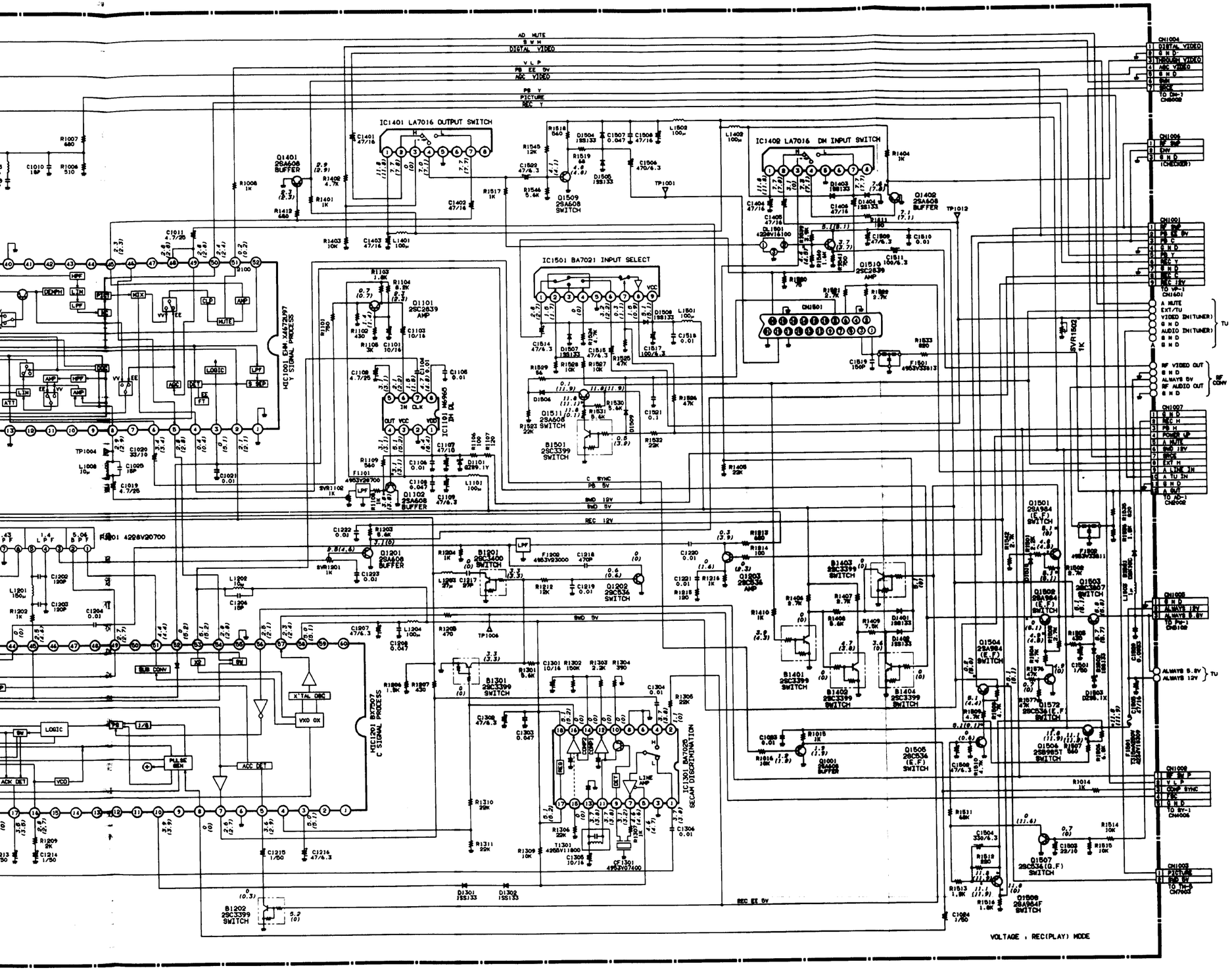
P.C.B. VD-1 VIDEO & TUNER (143-0-233V-62000)



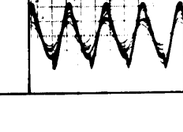
VHR-D500G
VHR-D500EX



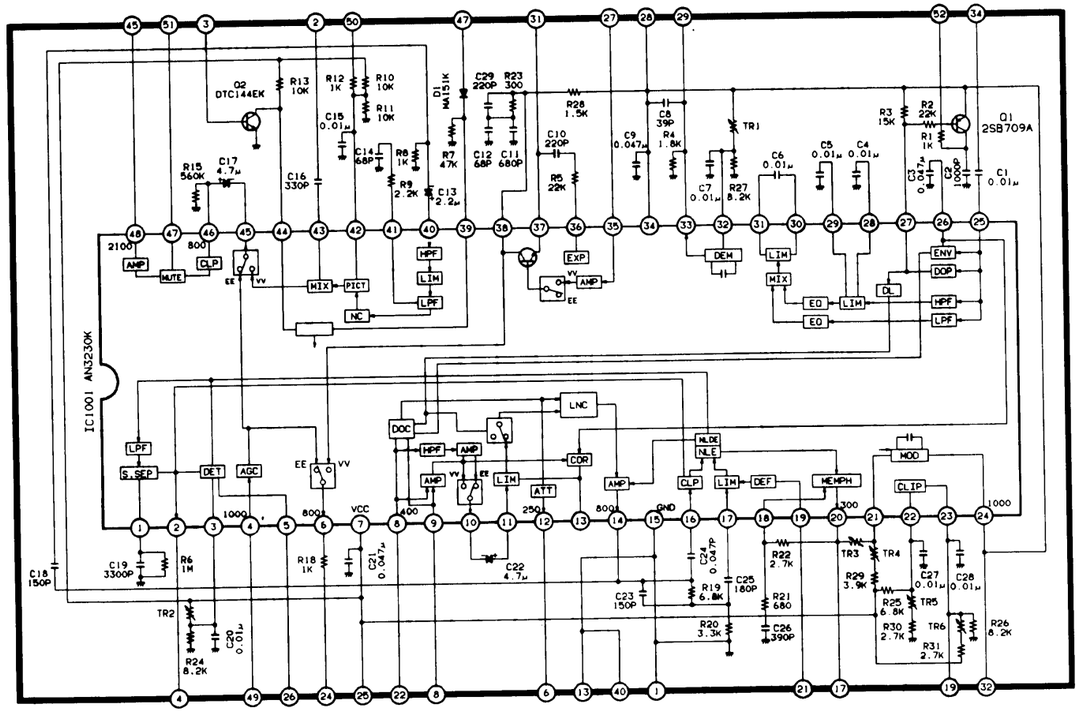
P.C.B. VD-1 VIDEO CIRCUIT (143-0-233V-62000)


IC1401 LA7016 OUTPUT SWITCH
IC1402 LA7016 DM INPUT SWITCH
IC1501 BA7021 INPUT SELECT
HIC1001 EMA-X4673J97 Y SIGNAL PROCESS
HIC1201 BX7507 C SIGNAL PROCESS
IC1301 BA7025 SECAM DISCRIMINATION
VOLTAGE : REC(PLAY) MODE

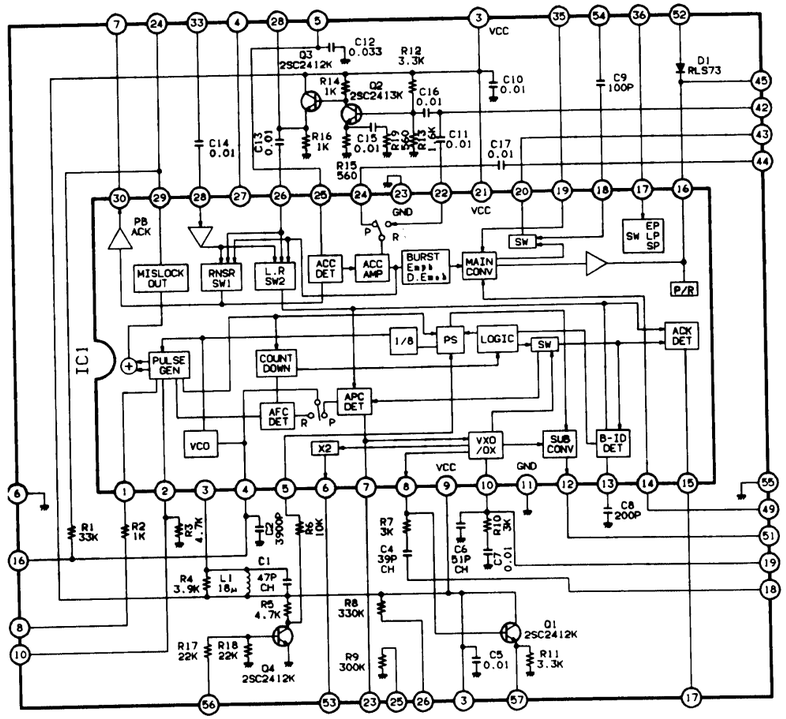
WAVEFORM OF VIDEO

Pin No.		
HIC 1001 (4)		1V/div 5 Vp-p
TP 1003		100 mV/div 400 m Vp-p
TP 1003		100 mV/div 400 m Vp-p
TP 1003 TP 1004		50 mV/div
TP 1002		REC 2 div=100%
TP 1005		200 mV/div 1 Vp-p
HIC 1001 (34)		PLAY 100 m V/div 350 m Vp-p
HIC 1001 (2)		100 mV/div 400 m Vp-p
TP 1001		200 mV/div 1 Vp-p
IC 1301 (9)		REC SECAM 100 mV/div
IC 1301 (11)		REC SECAM 1 V/div

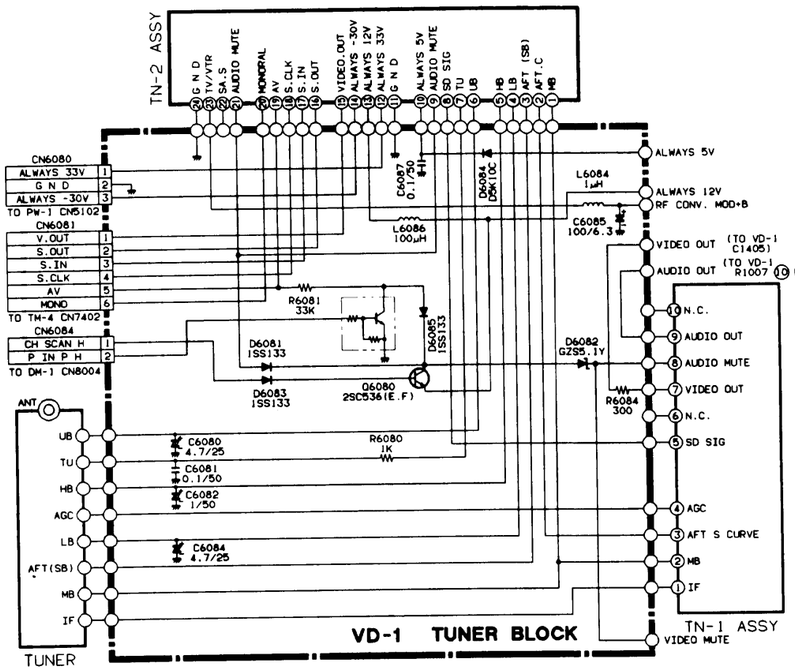
HIC 1001



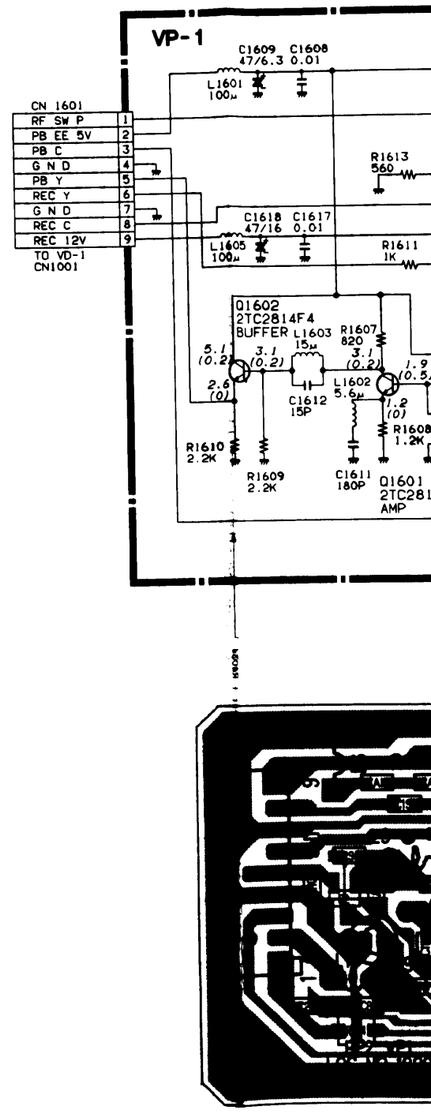
HIC 1201



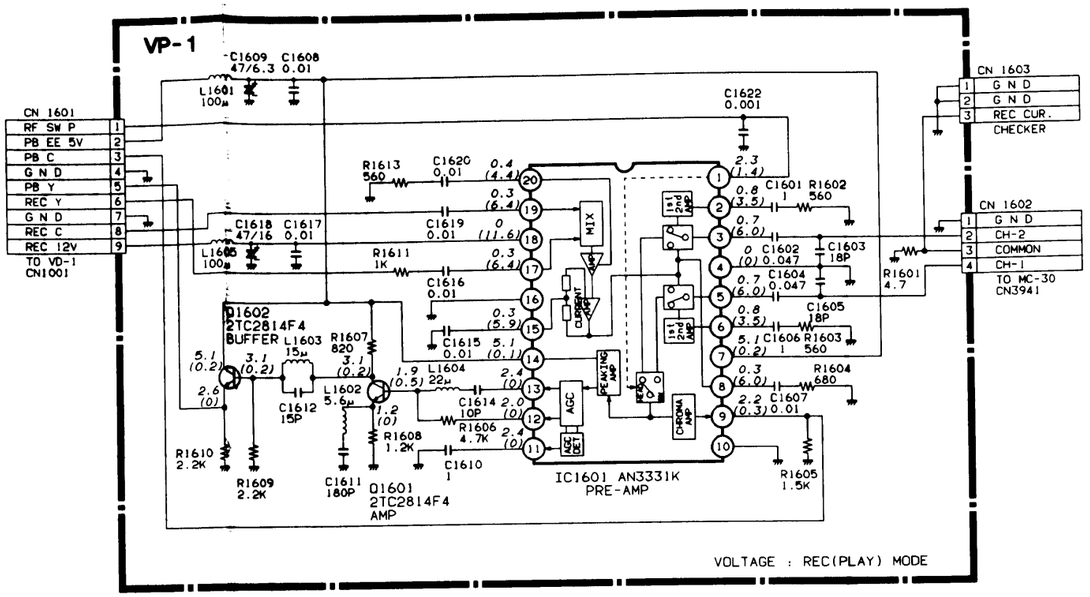
P.C.B. VD-1 TUNER CIRCUIT (143-0-233V-62000)

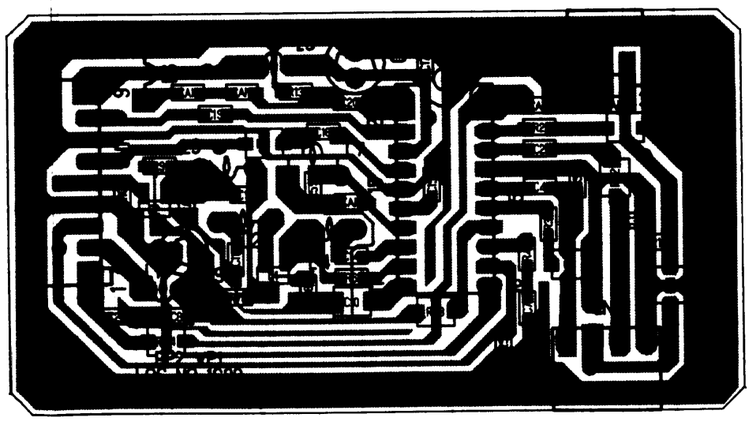


P.C.B. VP-1 VIDEO PR

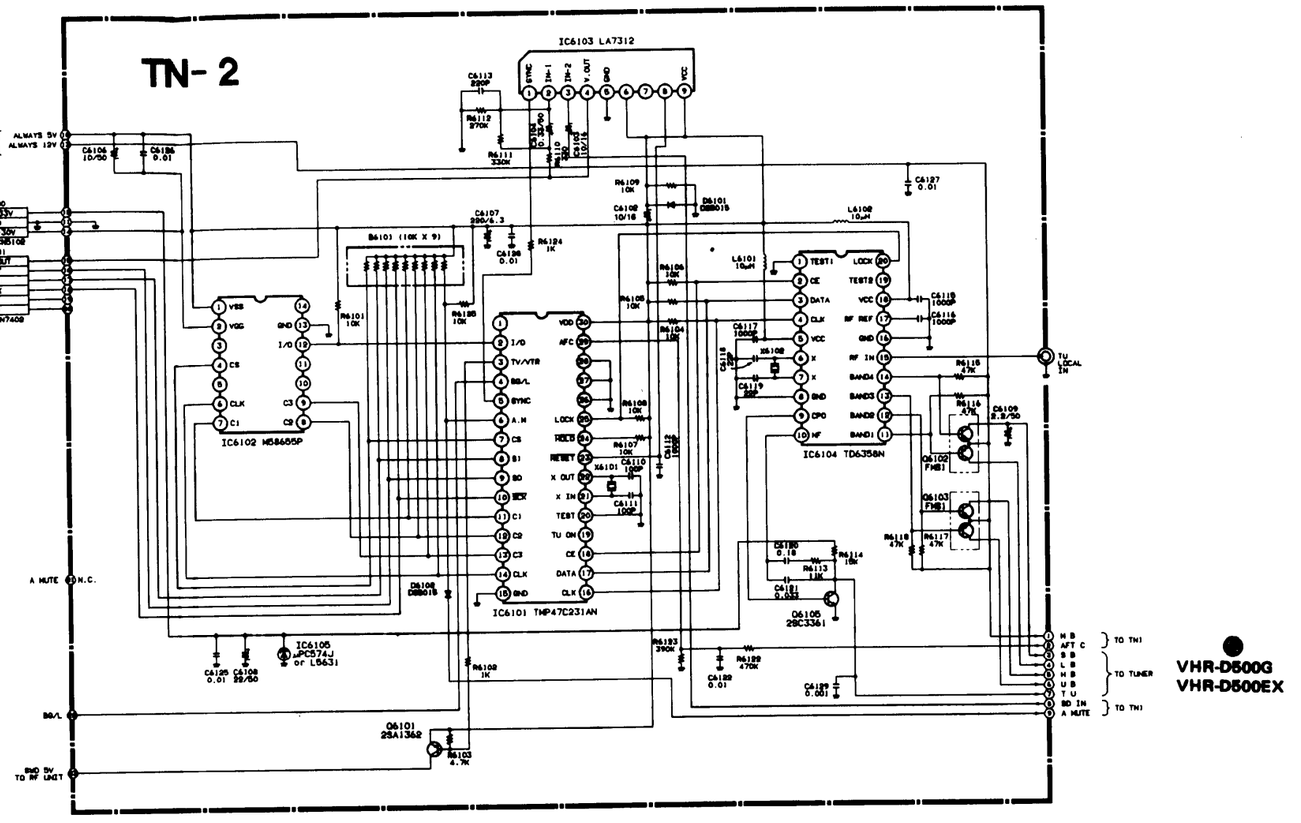


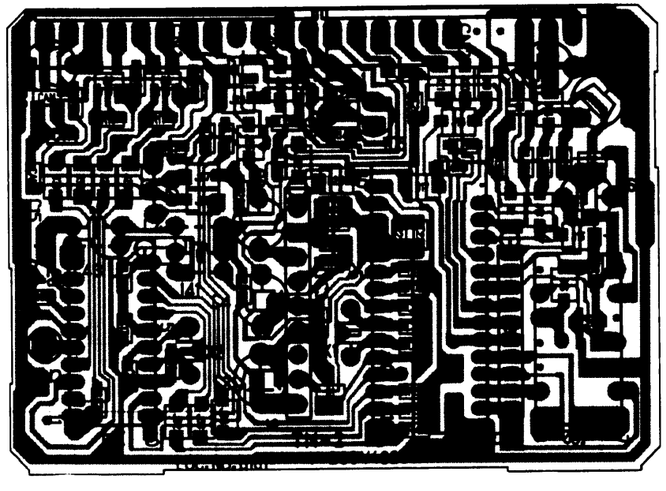
P.C.B. VP-1 VIDEO PRE-AMP CIRCUIT & P.C.B. (143-0-233V-47524)



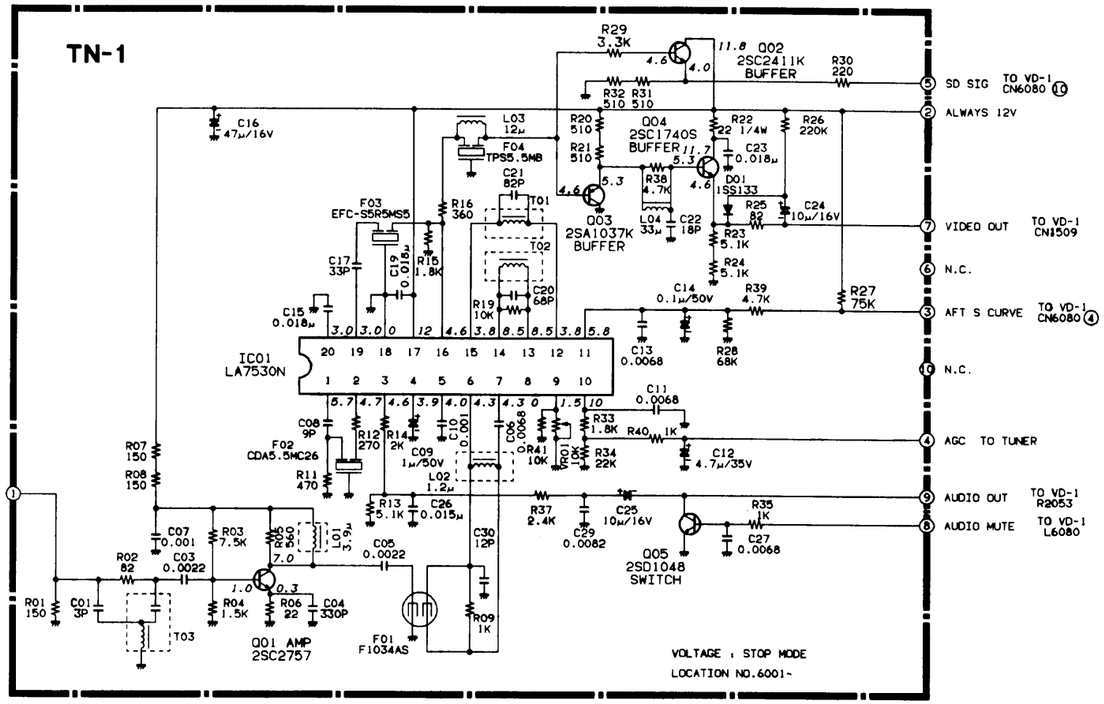


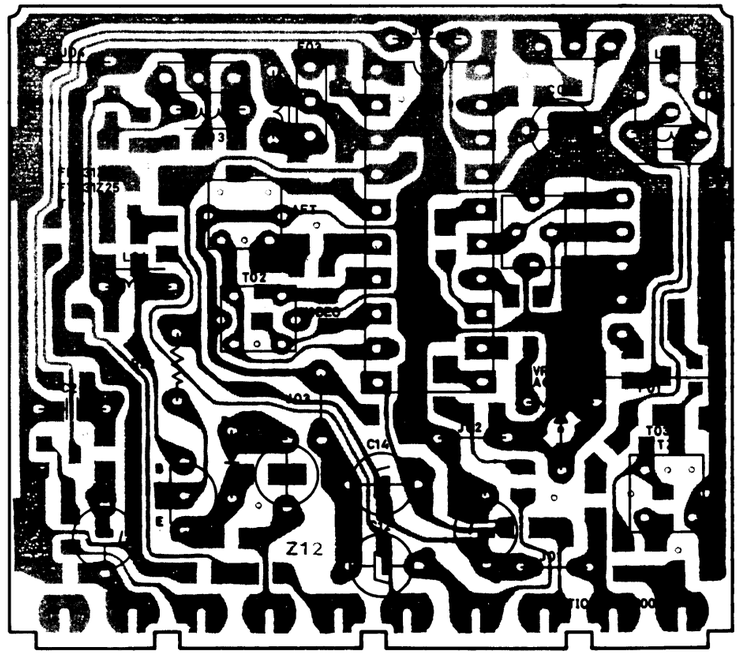
P.C.B. TN-2 TUNING CONTROL CIRCUIT & P.C.B. (143-0-233V-49221)



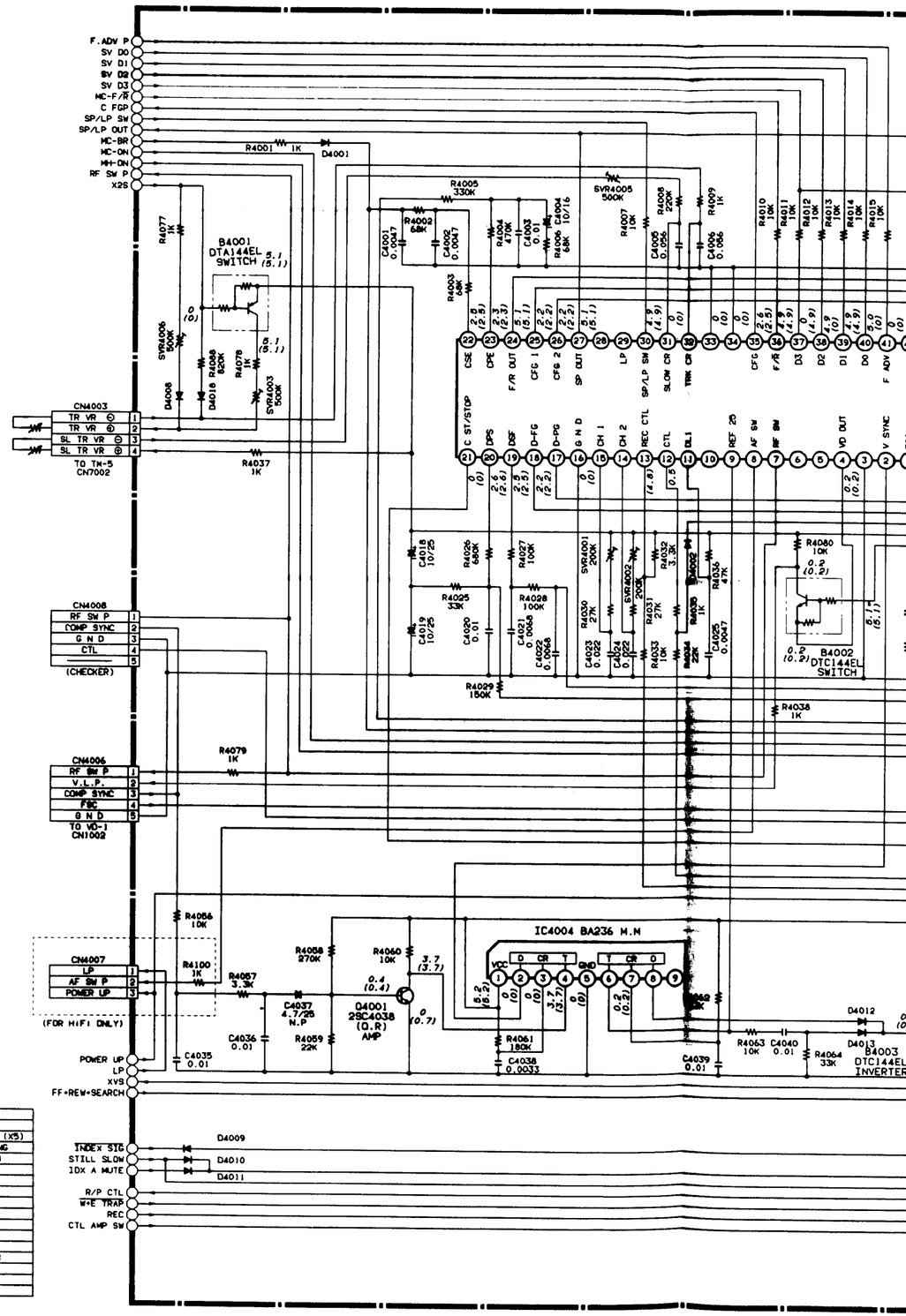


P.C.B. TN-1 TUNER IF CIRCUIT & P.C.B. (143-9-4300-83300)





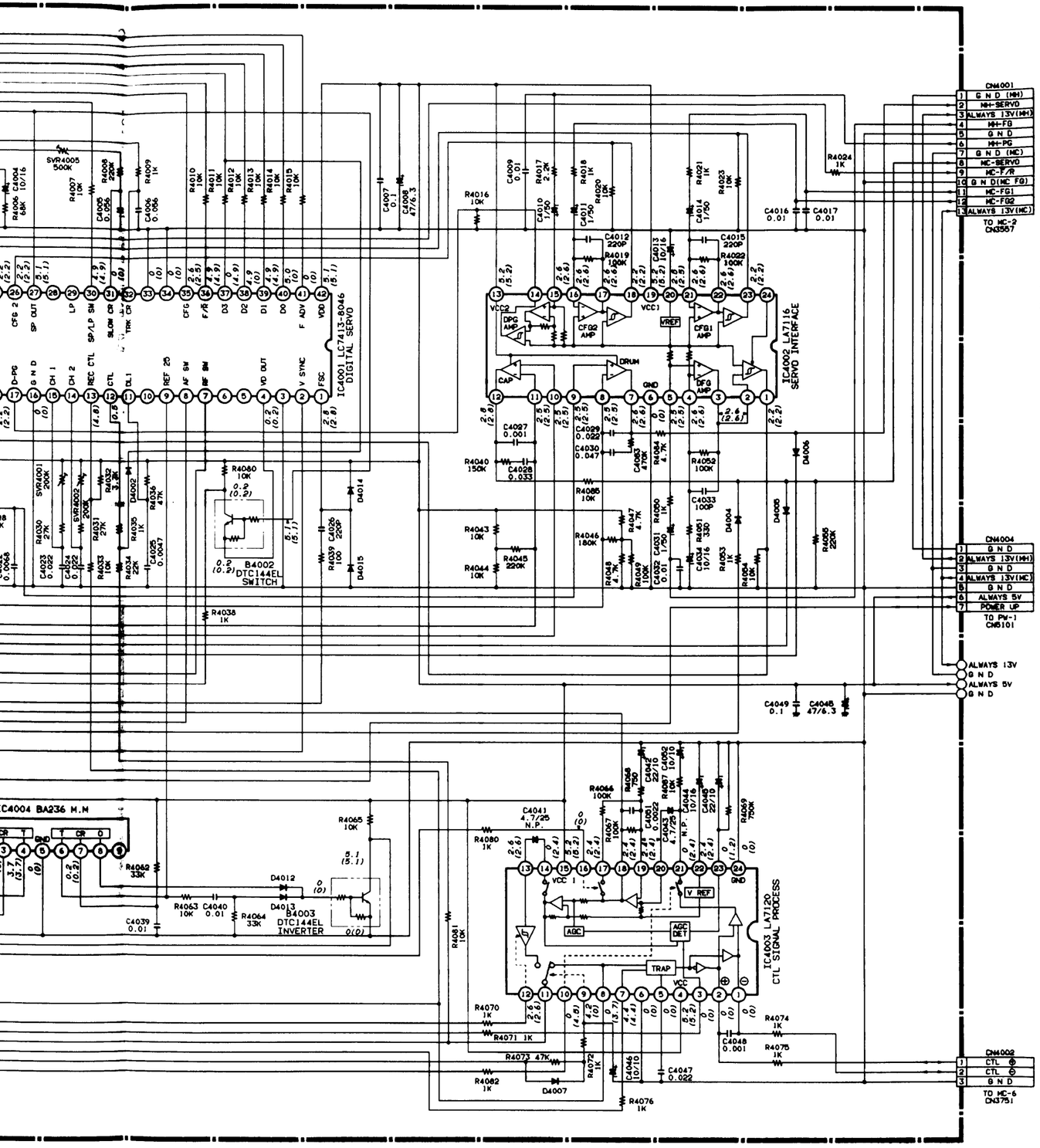
P.C.B. SY-1 SERVO CIRCUIT



	D3	D2	D1	D0	MODE
0	0	0	0	0	STOP
1	0	0	0	1	IDX SEARCH (X5)
2	0	0	1	0	TAPE LOADING
3	0	0	1	1	FF RWD (X7)
4	0	1	0	0	SP SPEED1
5	0	1	0	1	SP SPEED2
6	0	1	1	0	LP X 1
7	0	1	1	1	REC
8	1	0	0	0	EDIT
9	1	0	0	1	PB NOR1
A	1	0	1	0	PB NOR2
B	1	0	1	1	PB X 2
C	1	1	0	0	SEARCH (X9)
D	1	1	0	1	1/3 SLOW
E	1	1	1	0	SLOW
F	1	1	1	1	INSERT

VHR-D500G
VHR-D500EX

P.C.B. SY-1 SERVO CIRCUIT (143-0-233V-64400)



WAVEFORM OF SERVO

IC4001(LC7413-8042)

①	650mVpp, 4.43MHz
②	0.3msec, 5V, 20msec
⑦ ⑧ ⑨	5V, 20msec 20msec
⑪	0.2msec, 3V, 20 msec
⑫	REC, 0.5V, 0.2V, 24msec 16msec
	P.B., 4.2V, 24msec 16msec
⑬	REC P.B:···4.8VDC, 5V, 24msec 16msec
⑭ ⑮	5V, 20 msec
⑰	4.2V, 20msec 20msec
⑱	4.2V, 1.6 msec = 625Hz
⑲	5V, 8.59KHz
⑳	5V, 2.15KHz
㉒	5V, 8.59KHz

㉓	5V, 2.15KHz
㉕ ㉖	4.2V, 1512KHz
㉜	3V, 18msec 22 msec
㉟	5V, 2.6 msec

IC4002 (LA7116)

①	4.2V, 1.6msec
②	2.5Vp-p
⑤	1.5mV p-p
⑭	4.3V, 40msec
⑮	150mV p-p, 40 msec
⑰	1.5mV p-p, 0.66 msec
⑱	4.2V, 0.66msec
㉒	1.5Vp-p, 0.66msec
㉓	4.2V, 0.66 msec

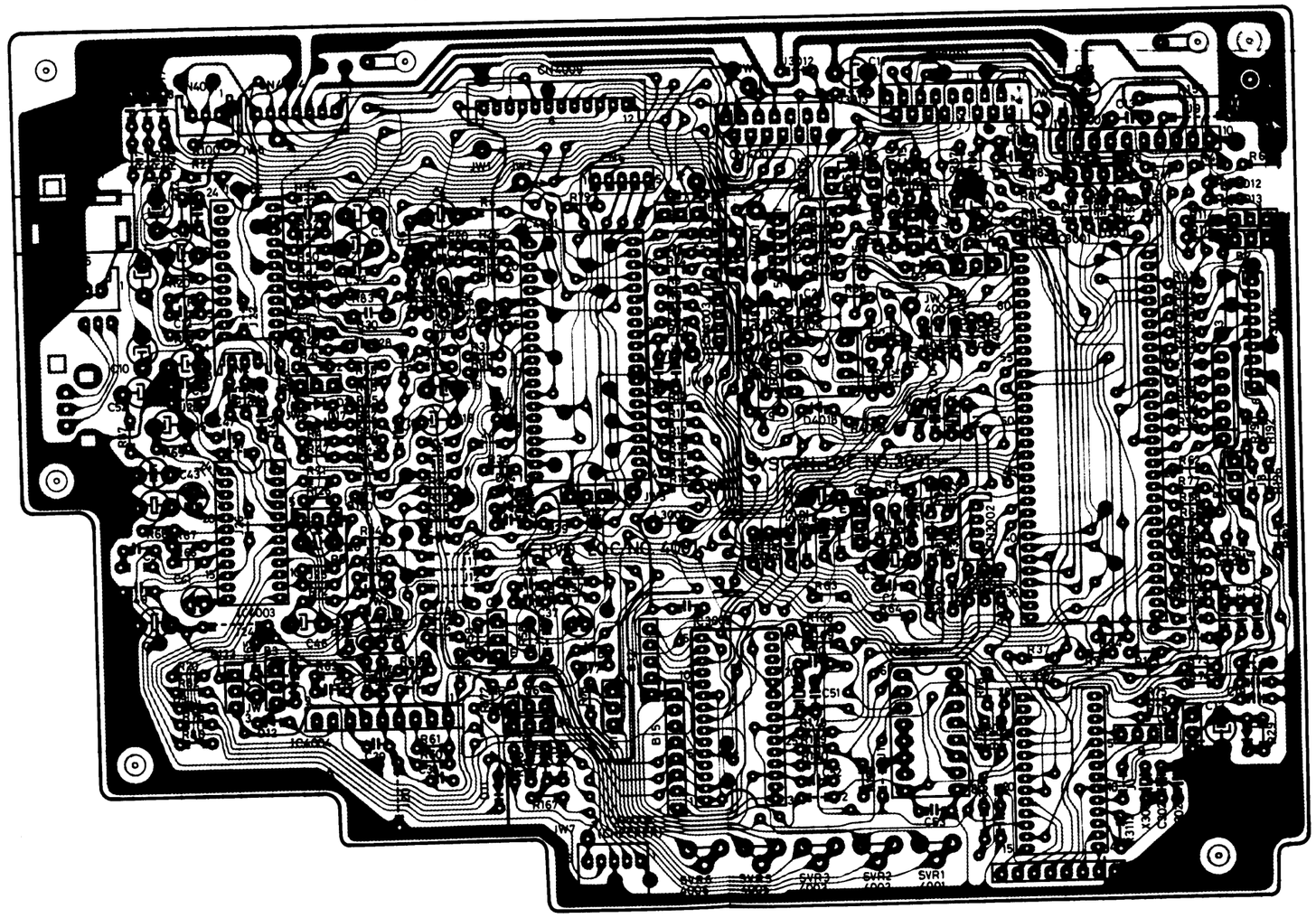
IC4003(LA7120)

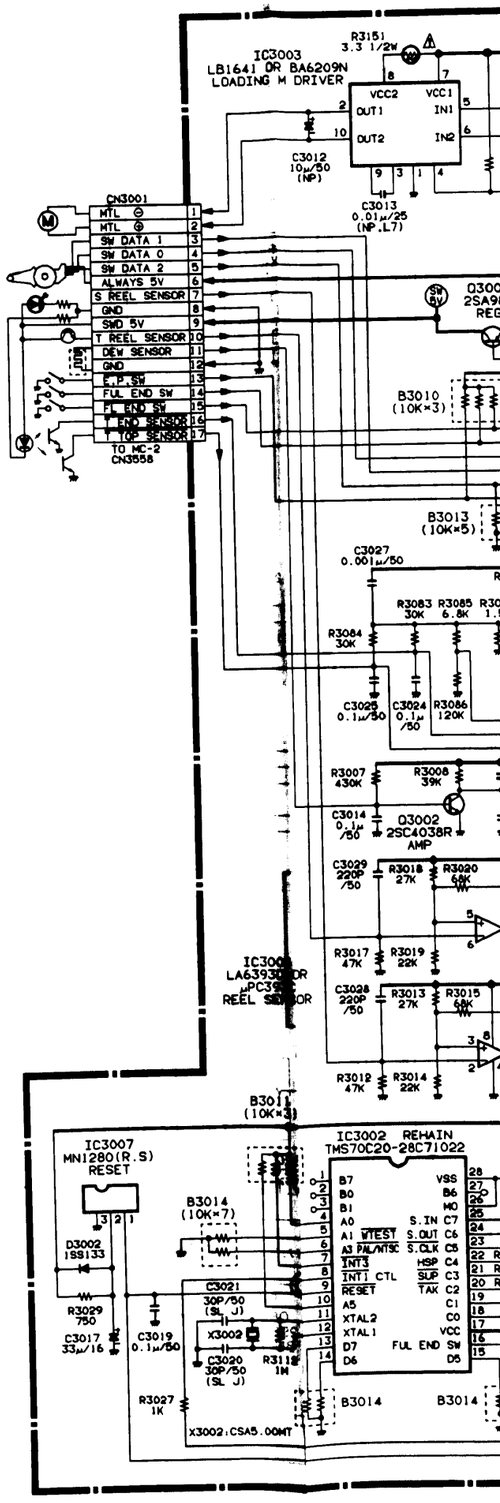
①	4.4V, 24msec 16msec
②	4.4V, 24msec 16msec
⑧	4V, 24msec 16msec
⑪	4.2V, 24msec 16msec
⑬	P.B., 12Vp-p, 40 msec
⑭	P.B, 1.2Vp-p
⑱	0.6Vp-p

IC4004(BA236)

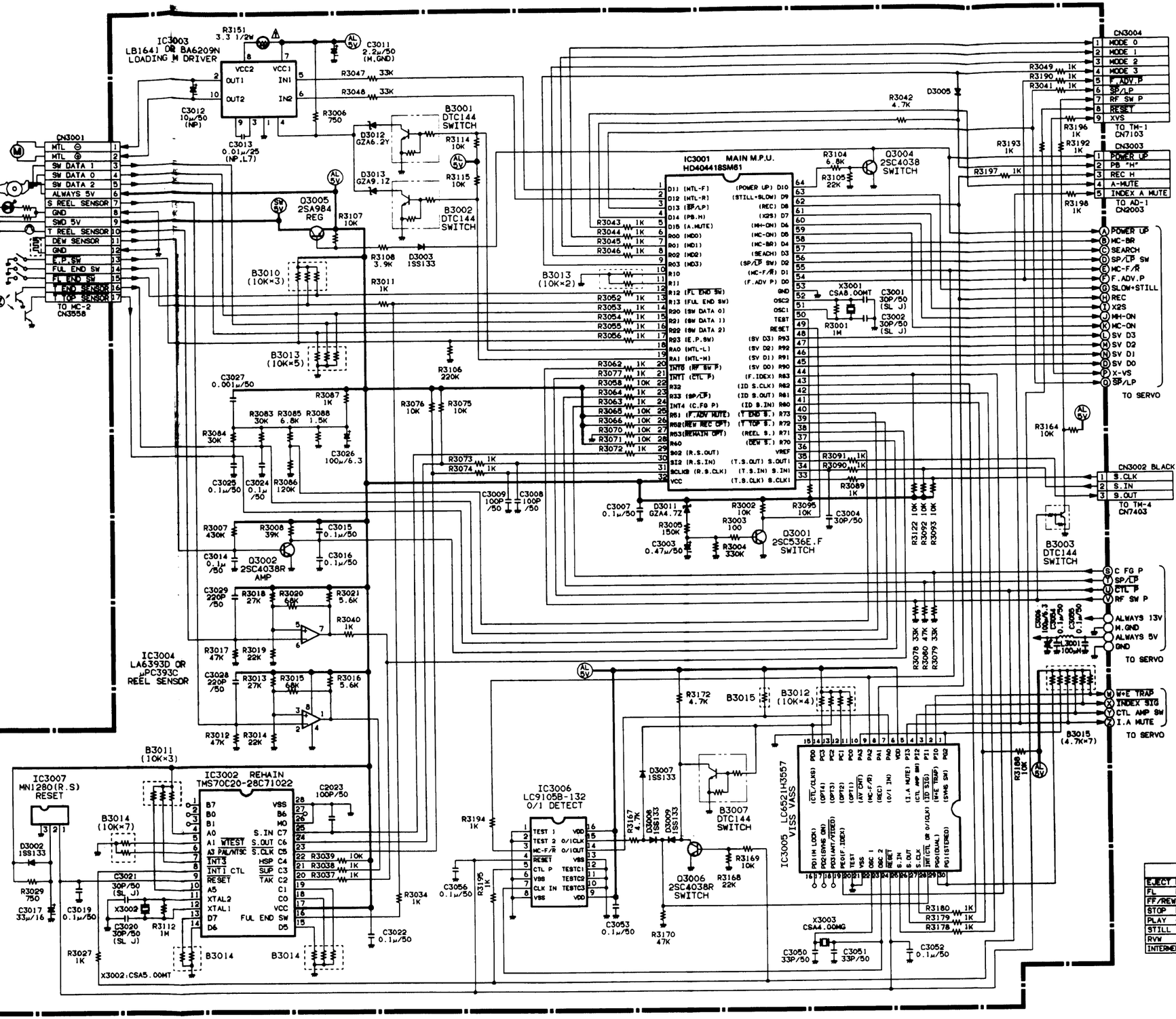
③	0.3msec, 2V, 20 msec
④	3.6V, 0.2 msec, 20 msec
⑥	5V, 20 20 msec
⑦	0.15 msec, 2V, 40 msec
⑧	0.15msec, 4.3V, 40 msec

P.C.B. SY-1 SYSTEM CONTROL & SERVO (143-0-233V-64400)





P.C.B. SY-1 SYSTEM CONTROL CIRCUIT (143-0-233V-64400)

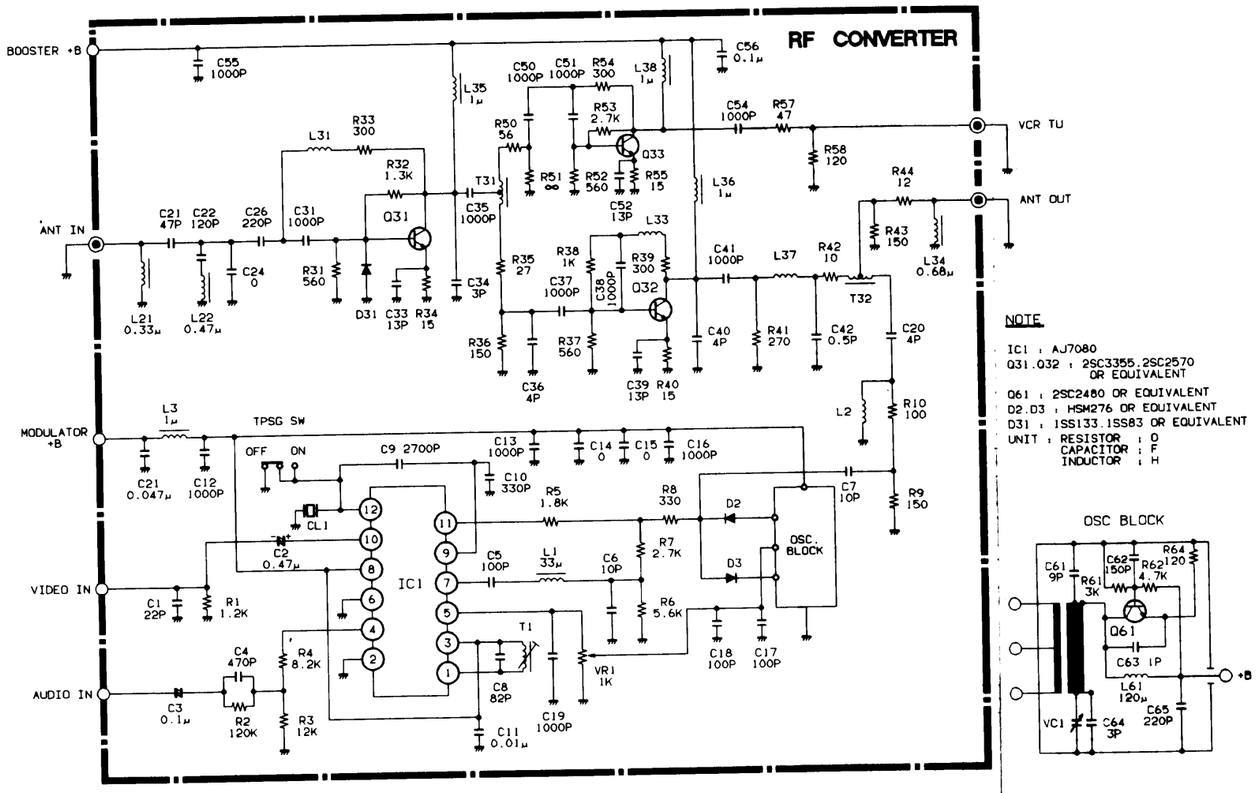


MODE	D3	D2	D1	D0	HEX
STOP	0	0	0	0	0
———	0	0	0	1	1
TL	0	0	1	0	2
FF REV,FL FUL	0	0	1	1	3
TL	0	1	0	0	4
TUL	0	1	0	1	5
MODE CHANGE	0	1	1	0	6
REC	0	1	1	0	7
PAUSE	1	0	0	0	8
MODE CHANGE PLAY	1	0	0	1	9
PLAY-A	1	0	1	0	A
X2S	1	0	1	1	B
CUE RVW	1	1	0	0	C
———	1	1	0	1	D
SLOW,STILL	1	1	1	0	E
———	1	1	1	1	F

	SW DATA2	SW DATA1	SW DATA0	HEX
EJECT POS	0	0	1	1
FL POS	1	1	1	7
FF/REW POS	0	1	0	2
STOP POS	0	1	1	3
PLAY POS	1	0	0	4
STILL POS	1	0	1	5
RVW POS	1	1	0	6
INTERMEDIATE POS	0	0	0	0

VHR-D500G
VHR-D500EX

RF CONVERTER (143-9-4300-84400)



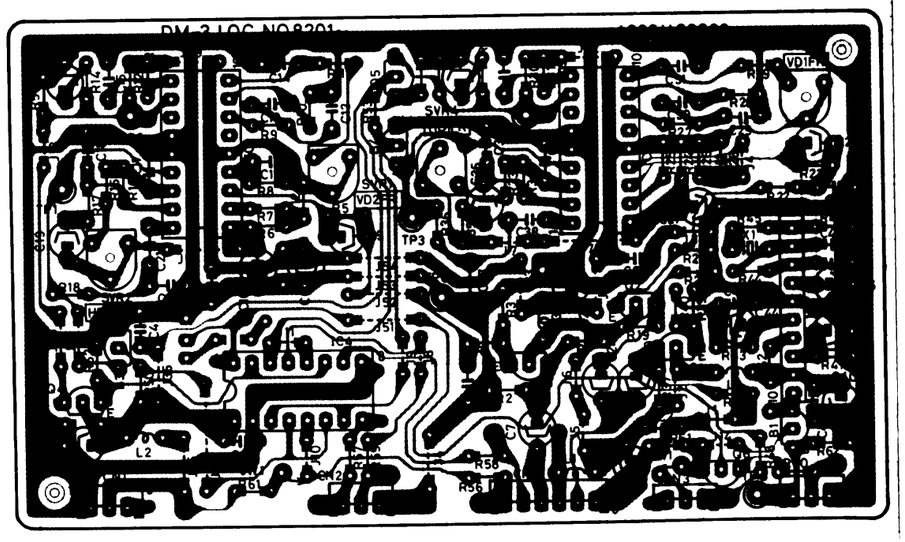
NOTE

IC1 : AJ7080
Q31.032 : 2SC3355.2SC2570 OR EQUIVALENT
Q61 : 2SC2480 OR EQUIVALENT
D2.D3 : HSM276 OR EQUIVALENT
D31 : 1SS133.1SS83 OR EQUIVALENT
UNIT : RESISTOR : Ω
CAPACITOR : F
INDUCTOR : H

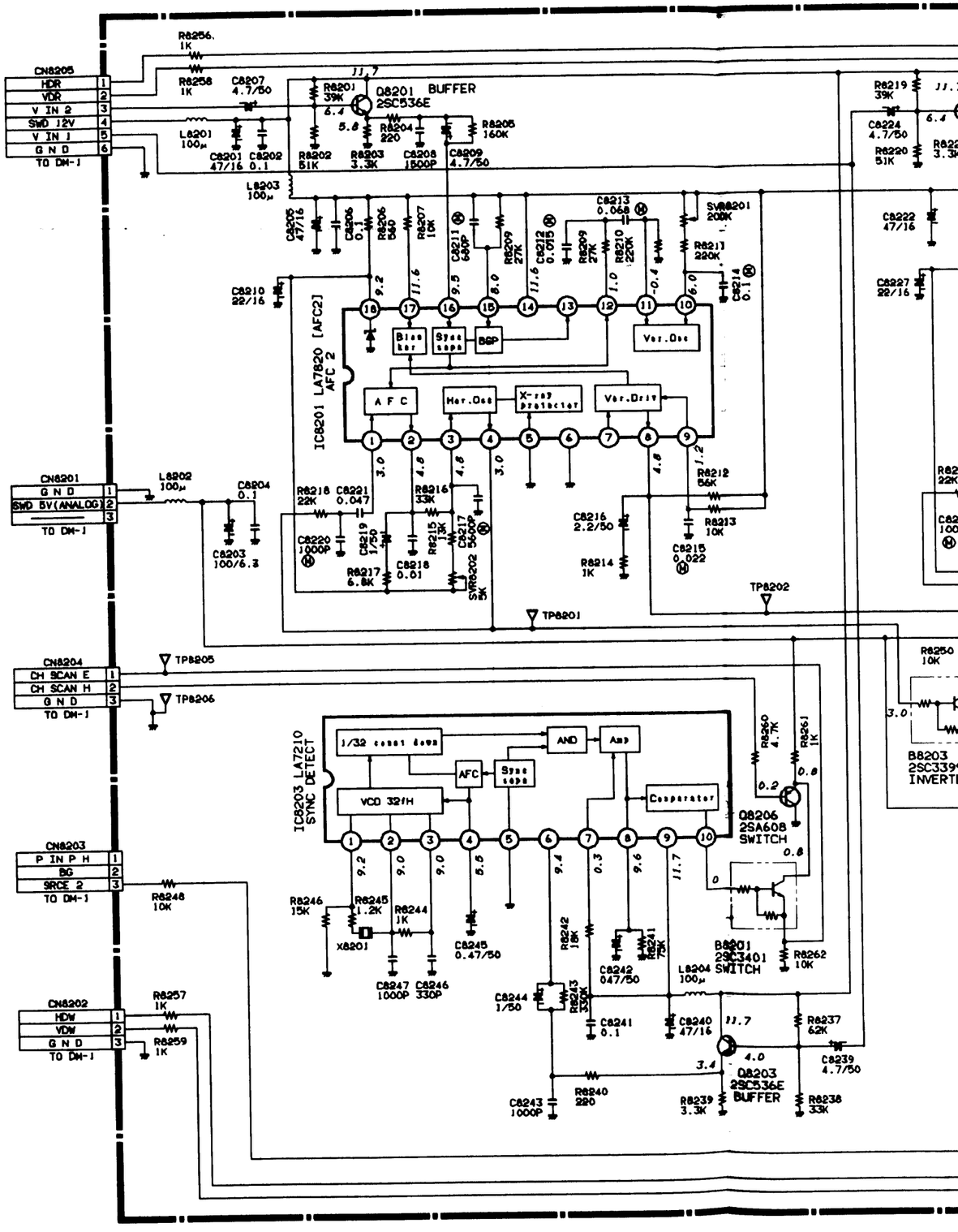
OSC BLOCK

VHR-D500G
VHR-D500EX

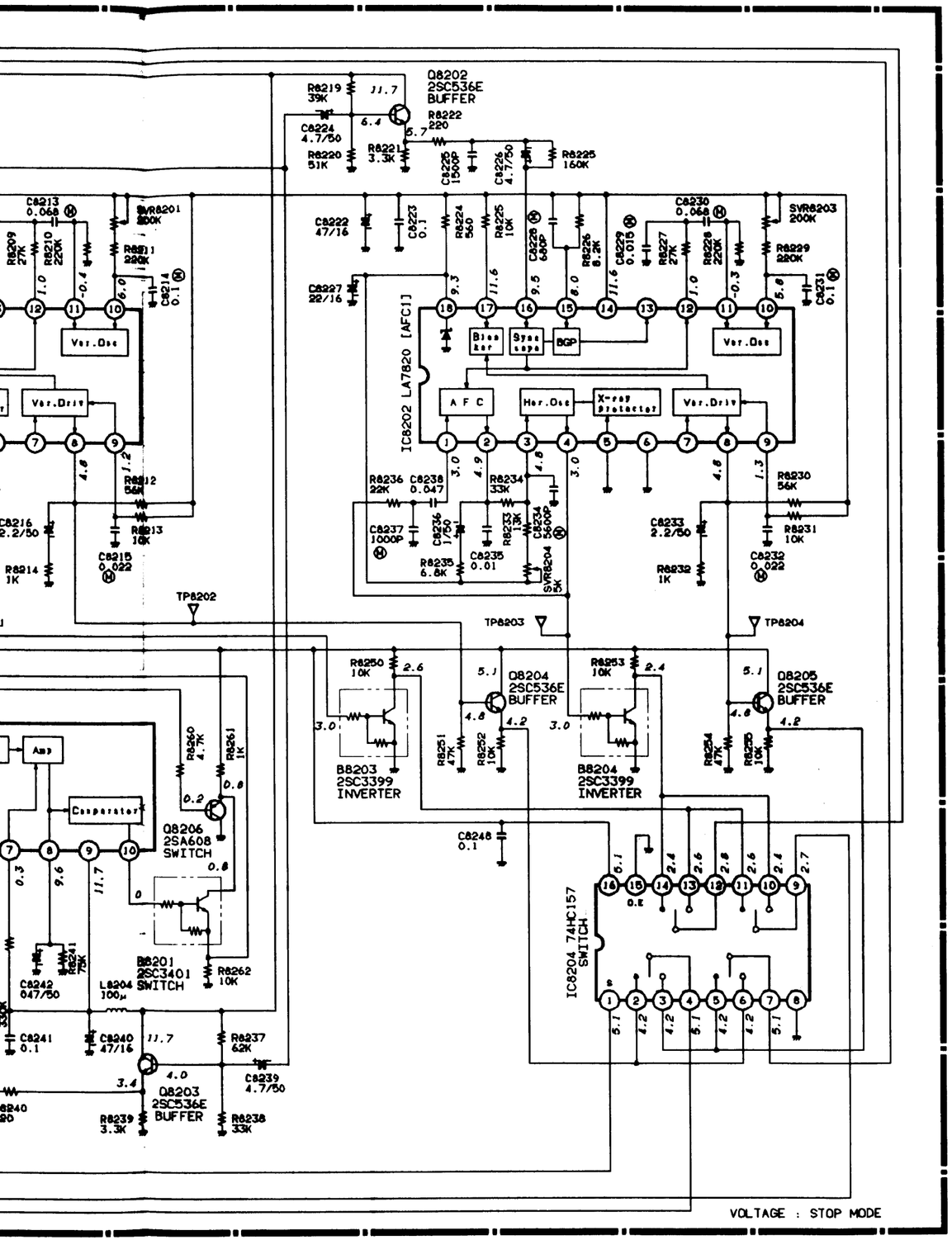
P.C.B. DM-3 SYNC. SEPARATOR (143-0-233V-63800)



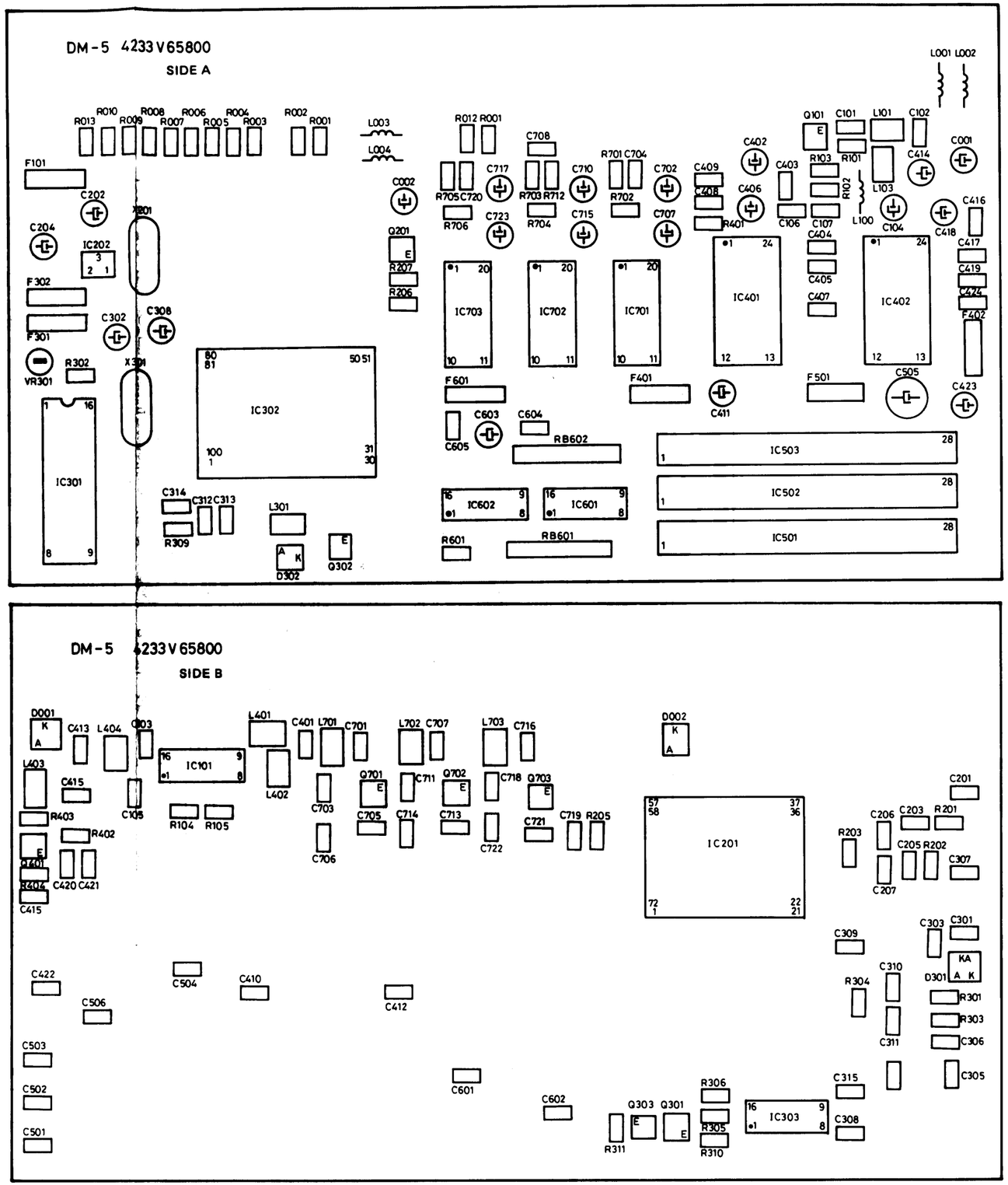
P.C.B. DM-3 SYNC. SEPARATOR CIRCUIT (143-0-



P.C.B. DM-3 SYNC. SEPARATOR CIRCUIT (143-0-233V-63800)



P.C.B. DM-5 DIGITAL VIDEO (143-0-233V-65800)



15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

D GND	1	
SWD 5V (ANALOG	2	P2
A GND	3	
Y IN	4	P4
B-Y IN	5	P5
R-Y IN	6	P6
COMP SYNC (C	7	P7 1K
Y OUT	8	P8
R-Y OUT	9	P9
B-Y OUT	10	P10
B F P	11	P11
BLK	12	P12 100
READ COMP SYNC	13	P13 1K
G N D	14	
HDW	15	P15 (1)
VDW	16	P16 (2)
(D GND) NC	17	
HDR	18	P18 (3)
VDR	19	P19 (4)
G N D	20	
SWMM	21	P21 100 (6)
	22	(5)
S W M	23	P23
P IN P H	24	P24 1K R1 1K (12) (15)
B G	26	P25 1K
SRCE 2	26	P26 R2 1K
SWD 5V(DIGITAL	27	P27 L3 BC1
D GND	28	D2 RL26.2V C3 100/6.3 L4 BC1
	29	
	30	
SRCE 1	31	P31 R3 1K
	32	
XVS	33	P33 R4 1K (1)
CH SCAN E	34	P34
F A W	35	P35 R5 1K
S IN	36	P36 R6 1K (2)
S OUT	37	P37 R7 1K
S CLK	38	P38 R8 1K
BUSY	39	P39 R9 1K
RESET	40	P40 R10 1K

CN1(1P-20P)
CN2(2)P-40P)

D GND (1P.2BP)

EMI Filter
DS8306-55F223Z
P2 P37 P40
F201 F301 F302
F401 F402 F501 F601

DS8306-55FZ103N
P23 P24 P31

DS8306-5510BN
P5 P6 P9 P10 P33 P34 P35

DS8306-5582Z1N
P4 P8 P11

DS8306-558101N
P15 P16 P18 P19

DS8306-5584701N
P36 P37 P38 P39

BC1 : BL02RN2-R42
BC2 : BL03RN6-R42

Q201 2SA1179 BUFFER

R207 4.7K

R101 2.2K Q101 2SA1179 BUFFER

L101 100μ
C101 0.022
R102 4.7K
L102 BC2
C102 0.022
C103 0.022
C104 47/6.3
IC101 HC4053 CMPX
L103 2.2μ
C105 0.022

D101 1SS184
R103 4.7K

L401 100μ
C401 0.022
C402 0.022
C403 0.022
L402 2.2μ
C404 0.022
C405 0.022
C406 47/6.3
IC401 M52578FP A-D CONVERTER
CLAMP
R401 5.1K
C408 0.00047
C409 0.022

IC201
M50747-680FP
INTERFACE μ-COM

I/O PORT
I/O PORT
I/O PORT
I/O PORT
I/O PORT
I/O PORT
ROM 8K byte
CPU 8bit
RAM 256 byte
INPUT PORT
OUT PORT

F201 47/6.3
C202 0.022
C201 0.022
C203 0.022
IC202 MN 128210
R201 47K
RESET
C205 0.022
C206 0.022
R208 100K

X201 8MHZ
C206 18P
C207 18P
R203 1K

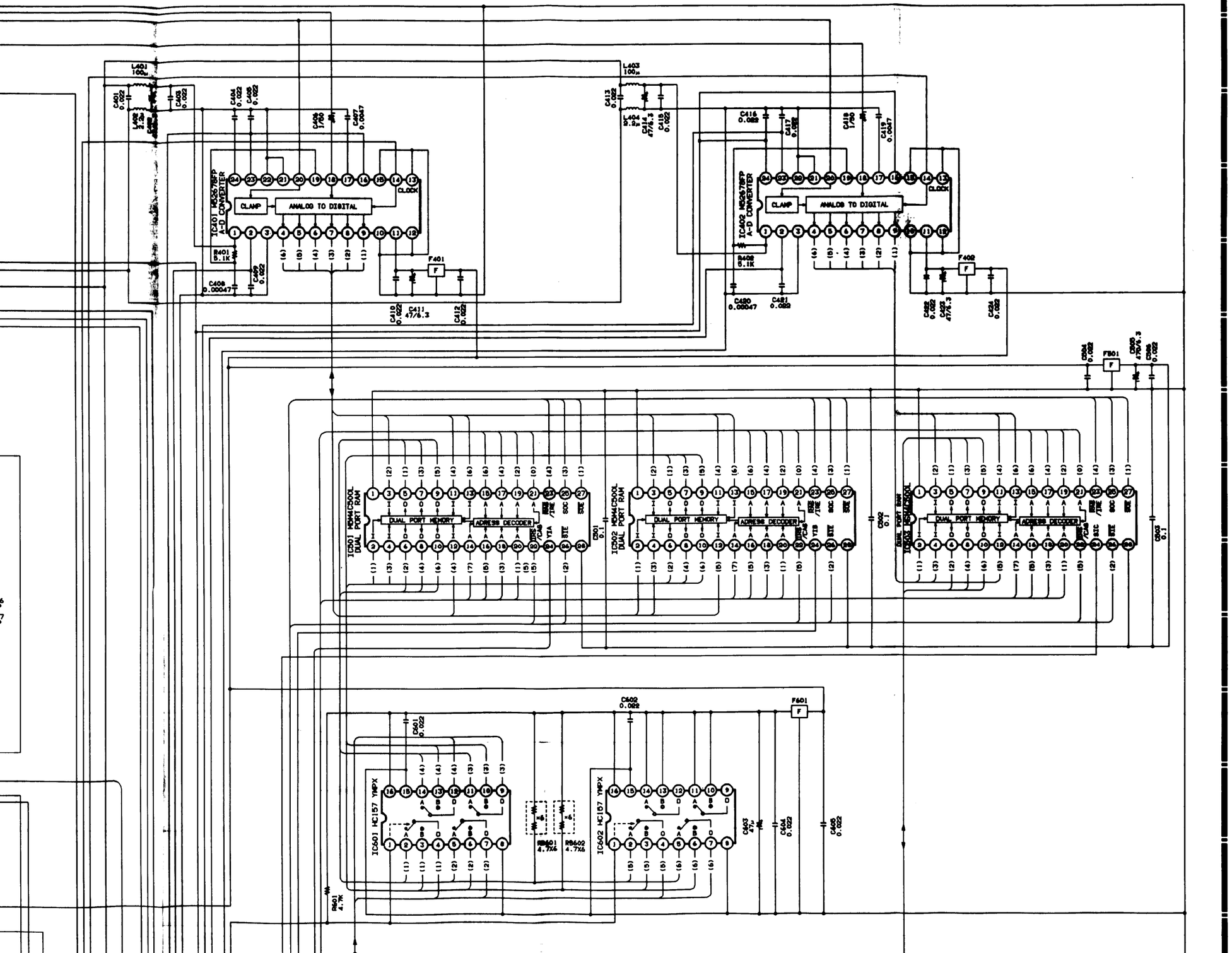
R209 10K
Q202 2SC3395 INVERTER

R204 10K
R205 10K
R206 10K

IC302 M60019-0251FP

GATE ARRAY (TIMING CONTROL)

DM-5 DIGITAL VIDEO CIRCUIT (143-0-233V-65800)



IC601 HC157 YMPX

IC602 HC157 YMPX

C601 0.022

C602 0.022

F601 F

C603 47µ

C604 0.022

C605 0.022

R601 4.7K

RB601 4.7X6

RB602 4.7X6

IC701 MS6269 Y D-A CONVERTER

IC702 MS6269 R-Y D-A CONVERTER

IC703 MS6679 B-Y D-A CONVERTER

ENABLE

DIGITAL TO ANALOG

CLOCK

BLK

L701 100µ

L702 100µ

L703 100µ

L704 1µ

L705 1µ

C701 0.022

C702 47/6.3

C703 0.022

C704 0.022

C705 0.022

C706 47/6.3

C707 0.022

C708 0.022

C709 0.022

C710 47/6.3

C711 0.022

C712 0.022

C713 0.022

C714 0.022

C715 47/6.3

C716 0.022

C717 47/6.3

C718 0.022

C719 0.022

C720 0.022

C721 0.022

C722 0.022

C723 47/6.3

R701 470

R702 470

R703 1K

R704 1K

R705 1K

R706 1K

Q701 2SA1179 BUFFER

Q702 2SA1179 BUFFER

Q703 2SA1179 BUFFER

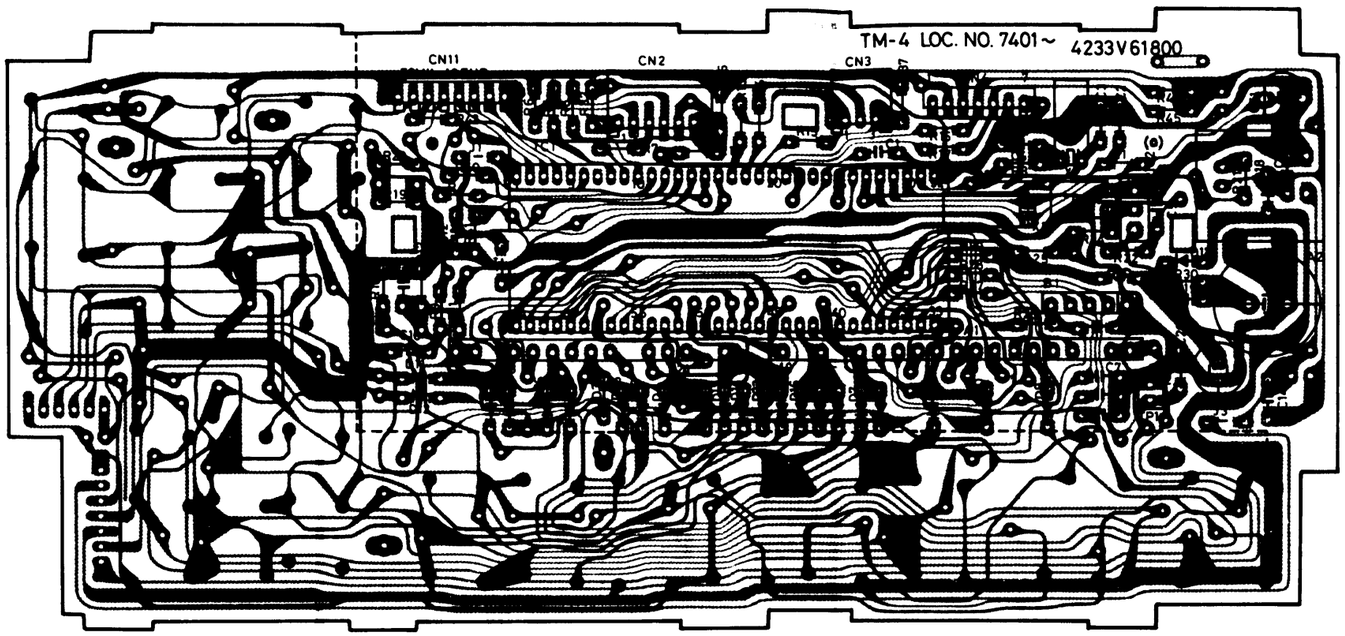
K

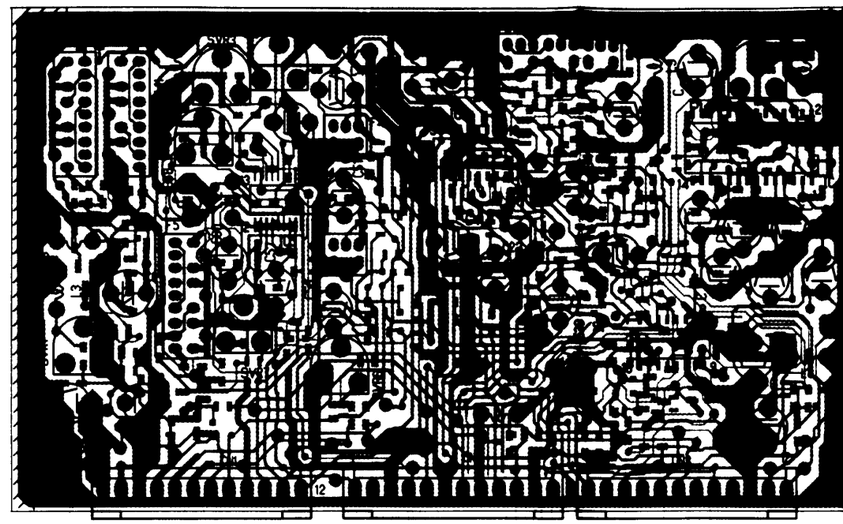
VHR-D500G

VHR-D500EX

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

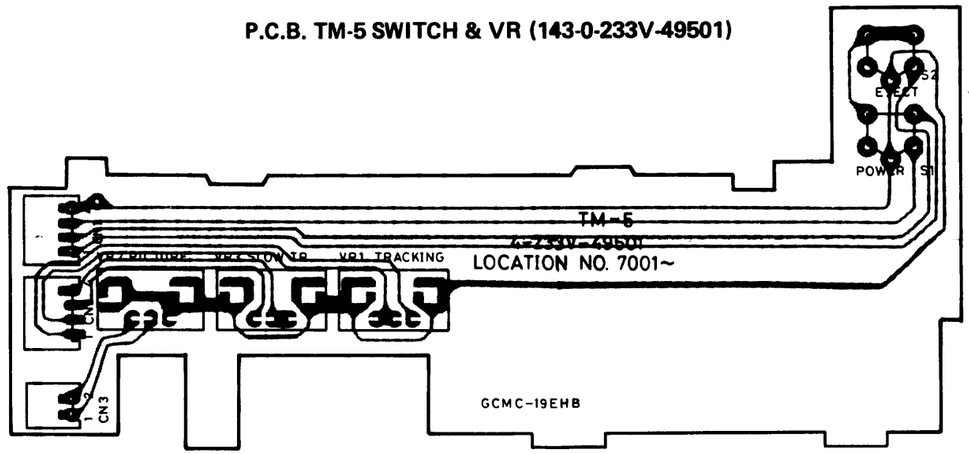
P.C.B. TM-4 DISPLAY, TIMER & SWITCH (143-0-233V-61800)





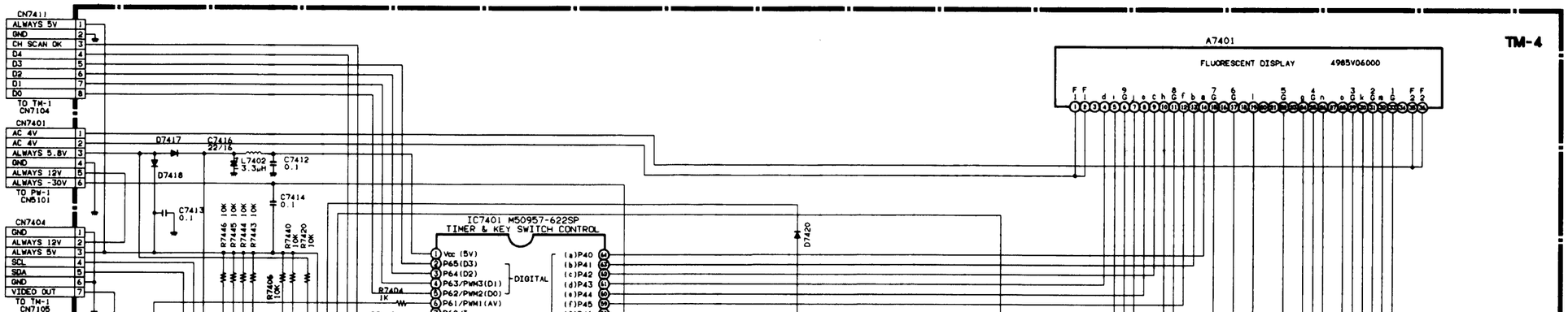
SIDE A

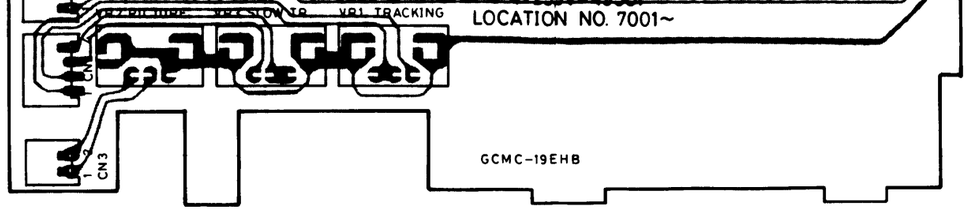
P.C.B. TM-5 SWITCH & VR (143-0-233V-49501)



P.C.B. TM-4,5 DISPLAY, TIMER, SWITCH & VR CIRCUIT (TM-4 143-0-233V-61800, TM-5 143-0-233V-49501)

TM-4





P.C.B. TM-4,5 DISPLAY, TIMER, SWITCH & VR CIRCUIT (TM-4 143-0-233V-61800, TM-5 14 3-0-233V-49501)

VHR-D500G
VHR-D500EX

IC7401 M50957-622SP
TIMER & KEY SWITCH CONTROL

A7401
FLUORESCENT DISPLAY

A7402
BX-1484
IR RECEIVER

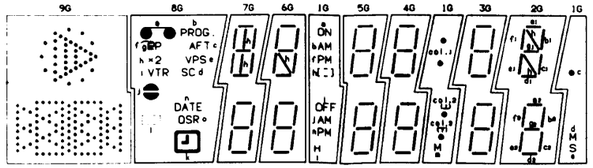
IC7402
MN1280-L

NOT SPECIFIED DIODE---GMA01 OR 1SS133

ANODE CONNECTION

	9G	8G	7G	6G	5G	4G	3G	2G	1G
a	B		a1	a1	a1	a1	a1	a1	ON
b	A	PROG.	b1	b1	b1	b1	b1	b1	AM(1)
c	-	AFT	c1	c1	c1	c1	c1	c1	DP
d	-	SC	d1	d1	d1	d1	d1	d1	M(1)
e	-	VPS	e1	e1	e1	e1	e1	e1	S
f	C	EP	f1	f1	f1	f1	f1	f1	PM(1)
g	D	EP	g1	g1	g1	g1	g1	g1	col.1
h	-	×2	/	/	-	-	-	/	⋮⋮
i	-	VTR	a2	a2	a2	a2	a2	a2	OFF
j	E		b2	b2	b2	b2	b2	b2	AM(2)
k	I		c2	c2	c2	c2	c2	c2	col.(2)
l	H	⋮⋮	d2	d2	d2	d2	d2	d2	H
m	J	-	e2	e2	e2	e2	e2	e2	M(2)
n	F	DATE	f2	f2	f2	f2	f2	f2	PM(2)
o	G	OSR	g2	g2	g2	g2	g2	g2	col.(2)

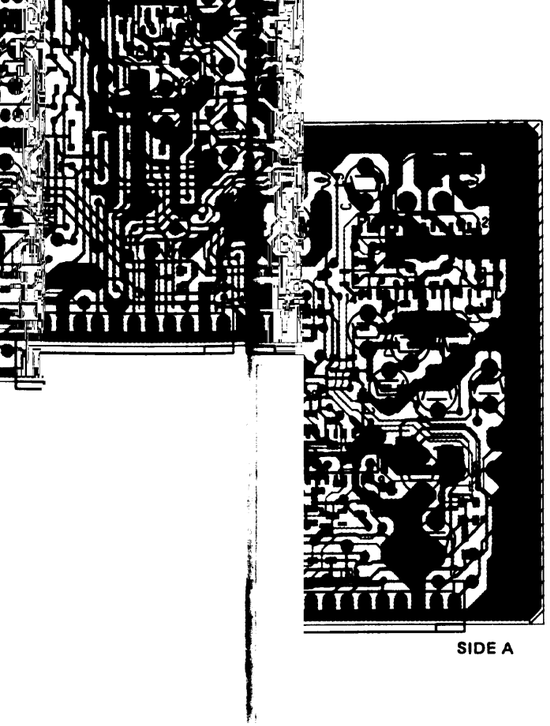
GRID ASSIGNMENT



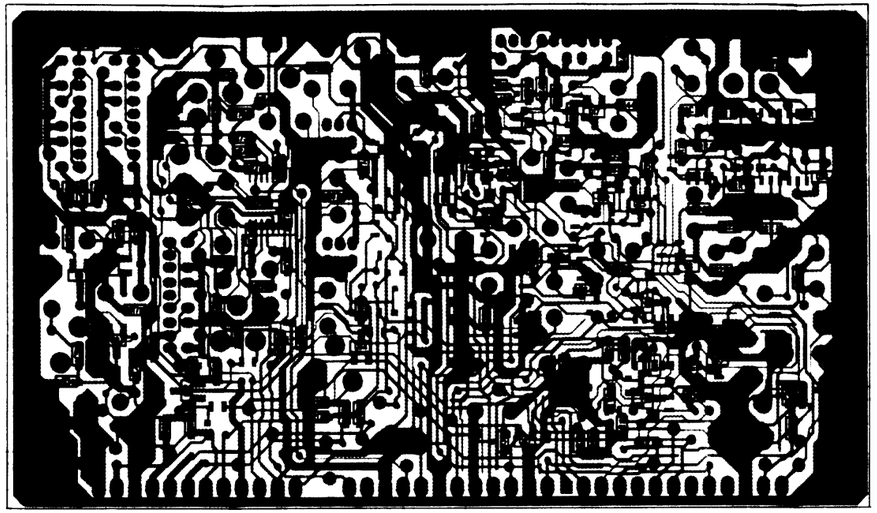
TM-4

TM-5

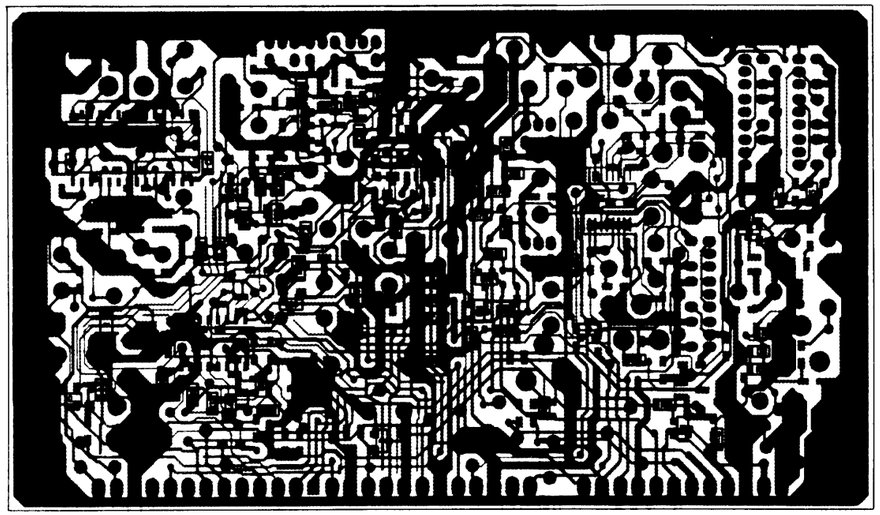
P.C.B. DM-2 REC/PB VIDEO SIGNAL PROCESS (143-0-233V-63700)



SIDE A

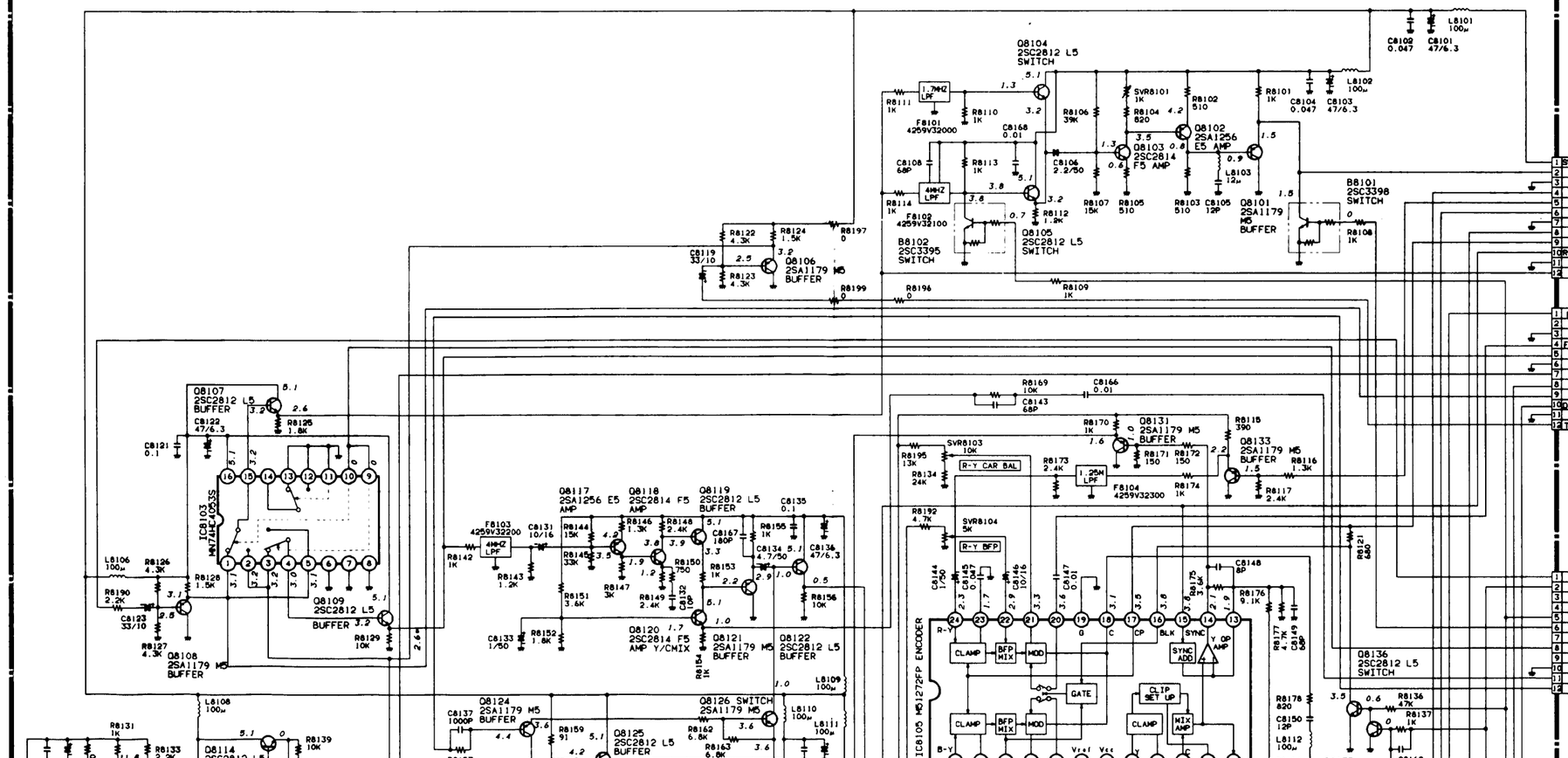


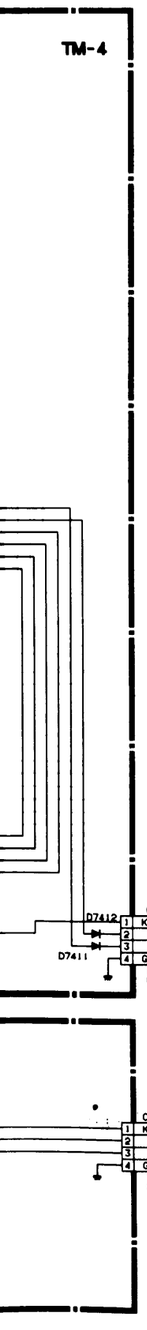
SIDE A

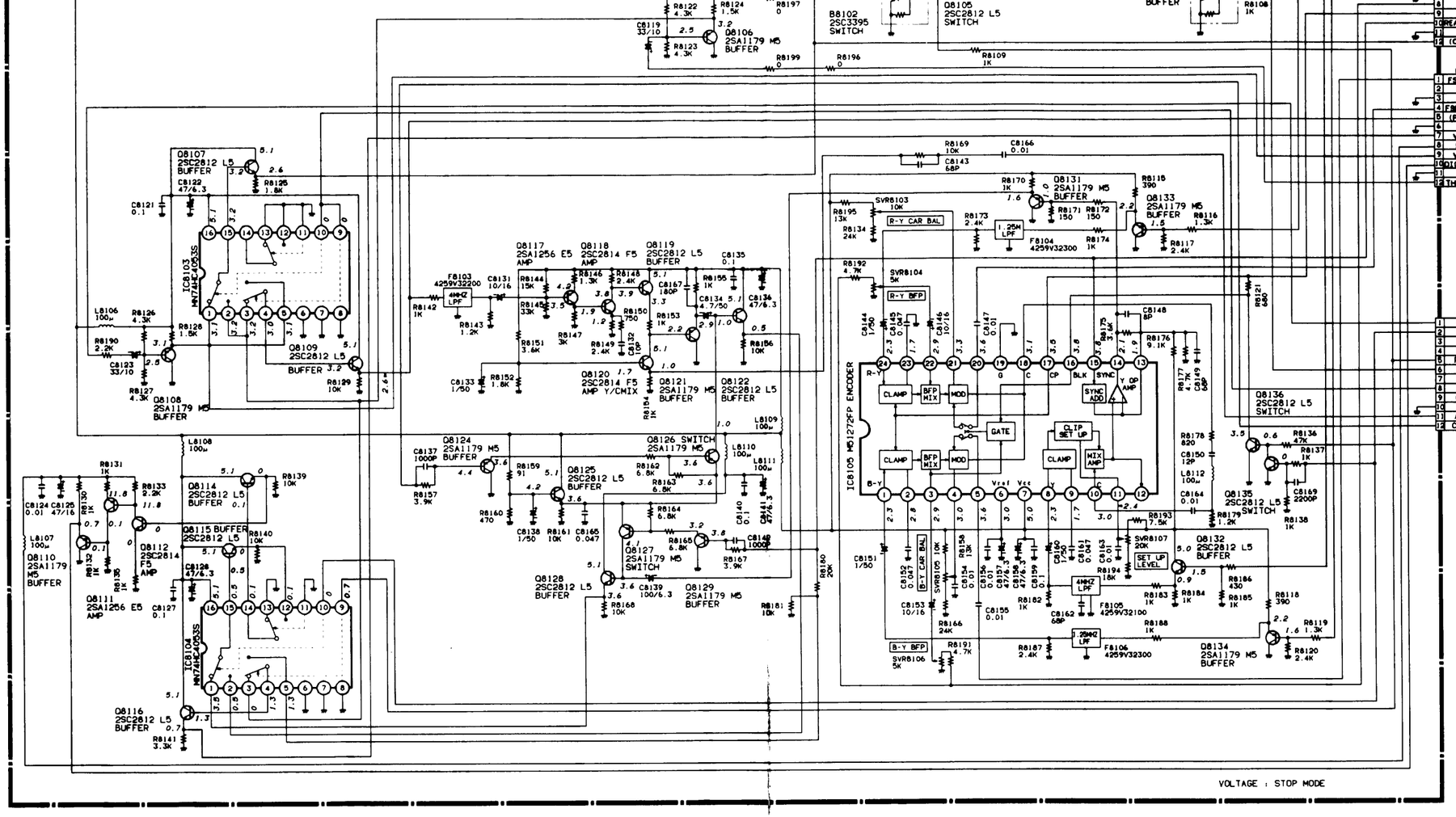


SIDE B

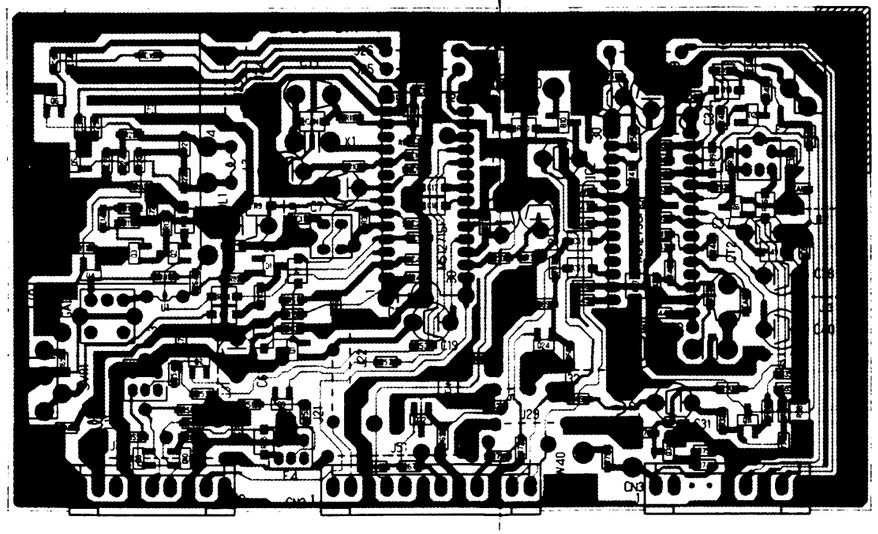
P.C.B. DM-2 REC/PB VIDEO SIGNAL PROCESS CIRCUIT (143-0-233V-63700)



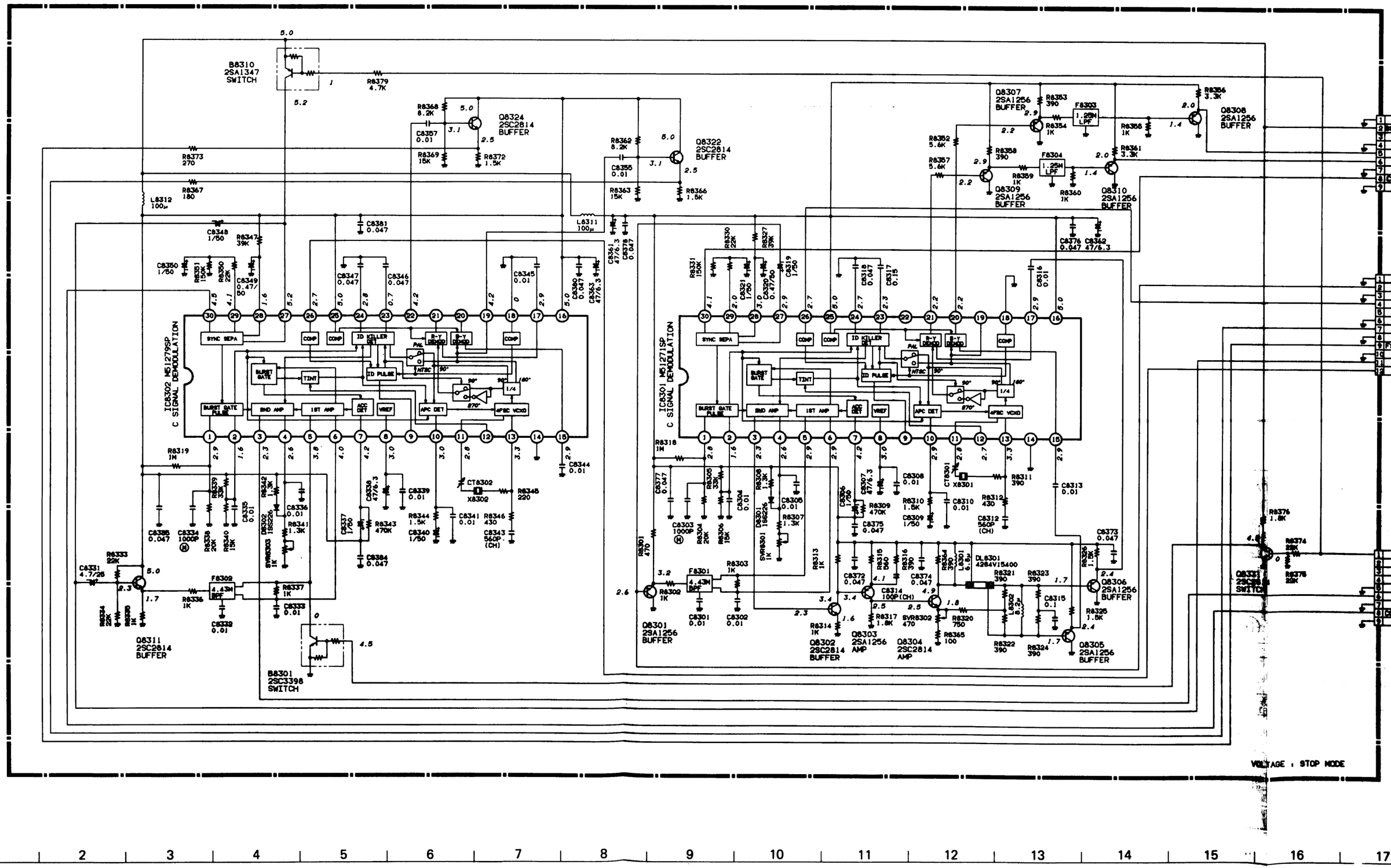


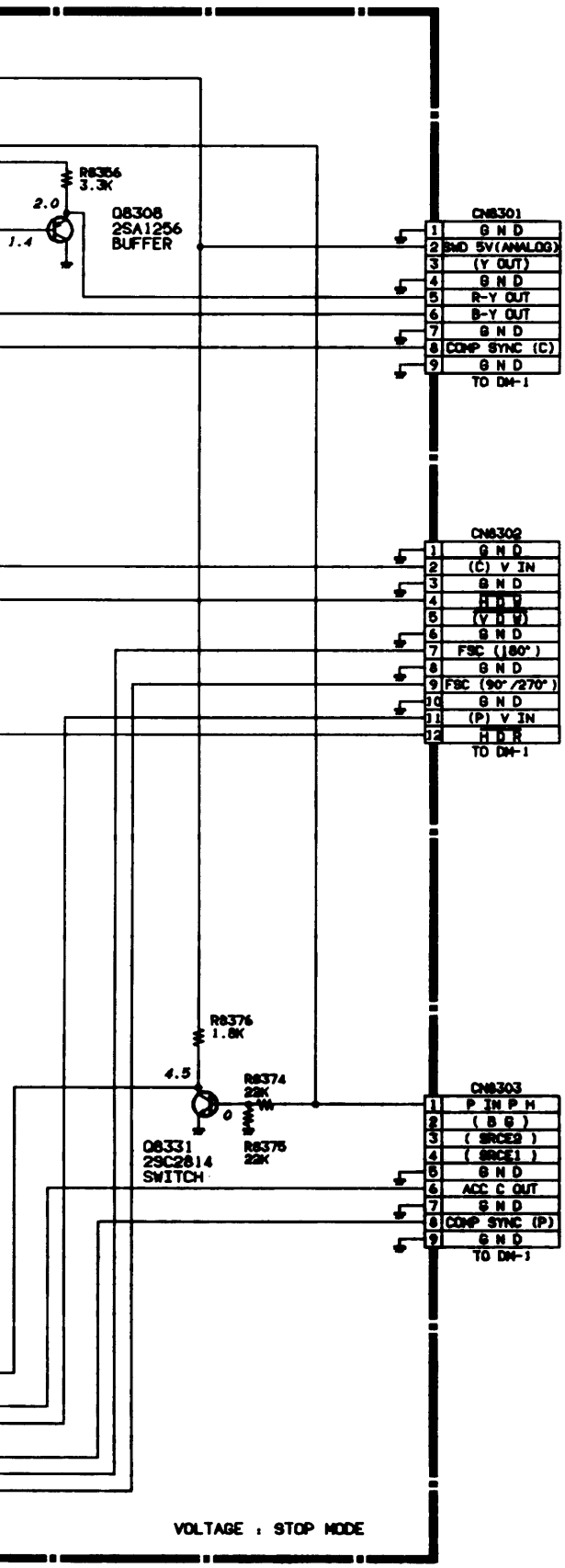


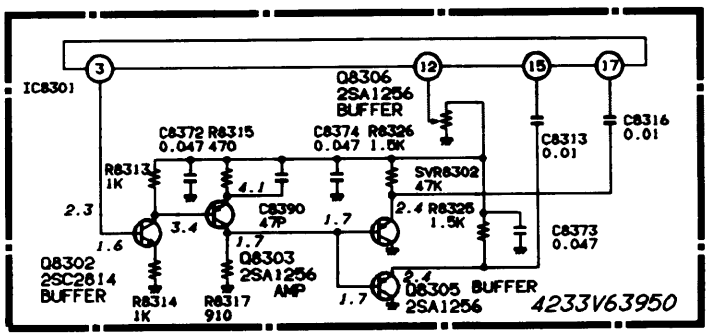
P.C.B. DM-4 Y/N SIGNAL PROCESS (143-0-233V-63950)



P.C.B. DM-4 Y/N SIGNAL PROCESS CIRCUIT (143-0-233V-63950)

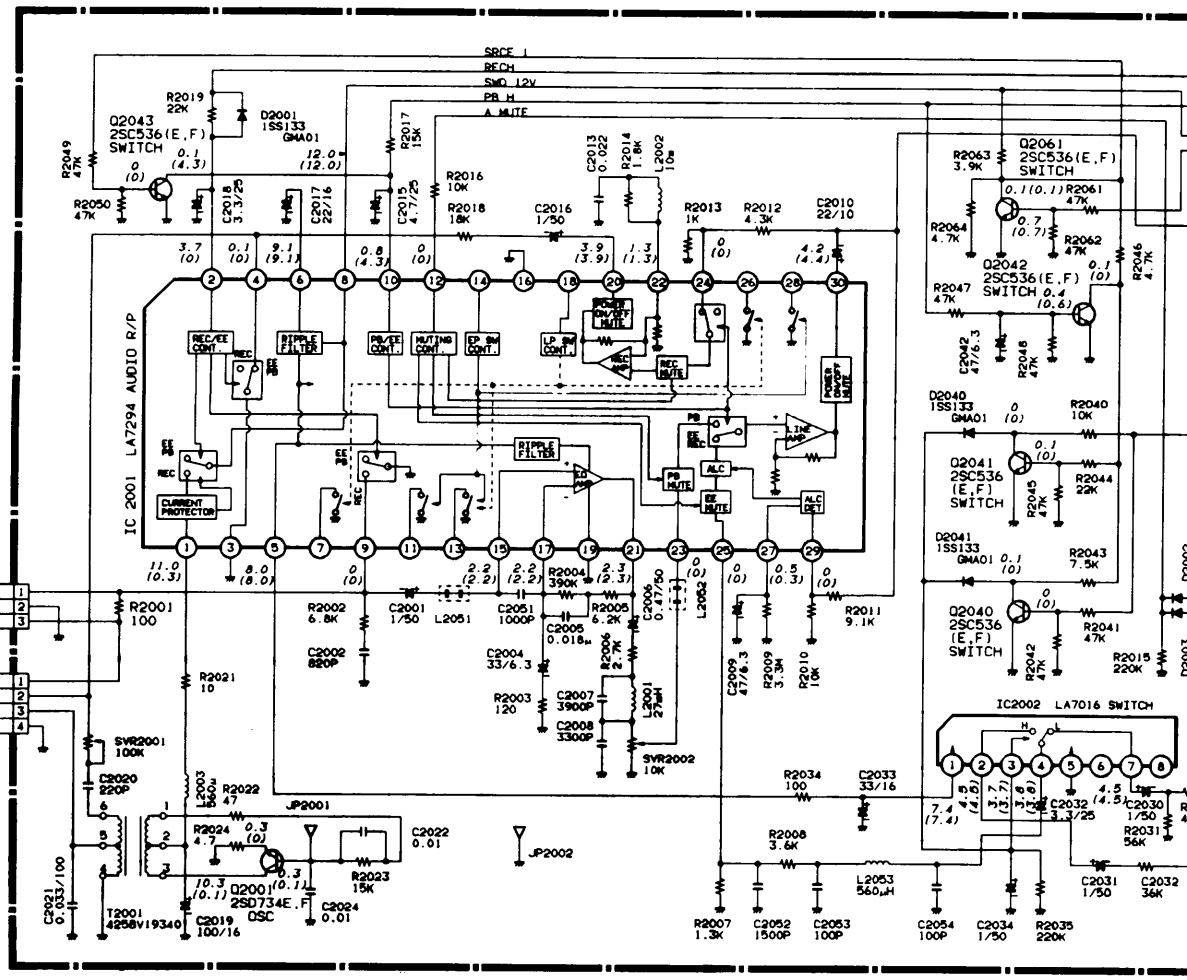


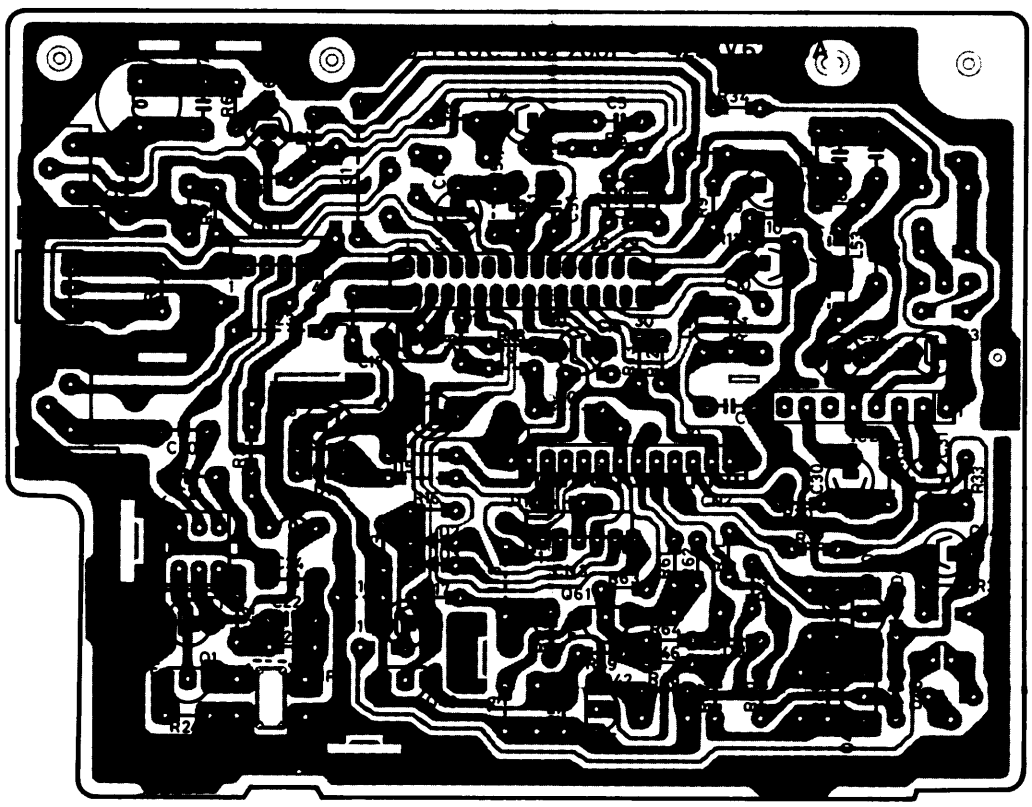




Ⓜ
VHR-D500G
VHR-D500EX

P.C.B. AD-1 AUDIO CIRCUIT & P.C.B. (143-0-233V-62600)

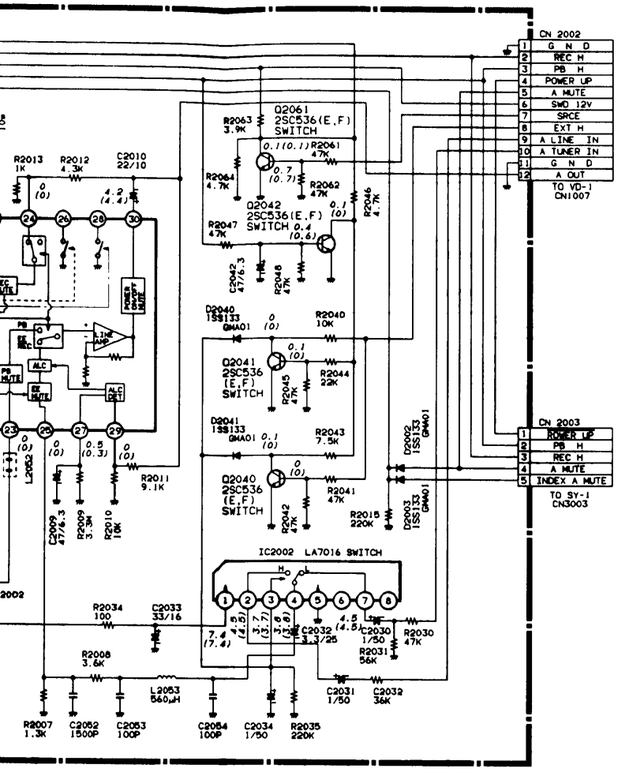


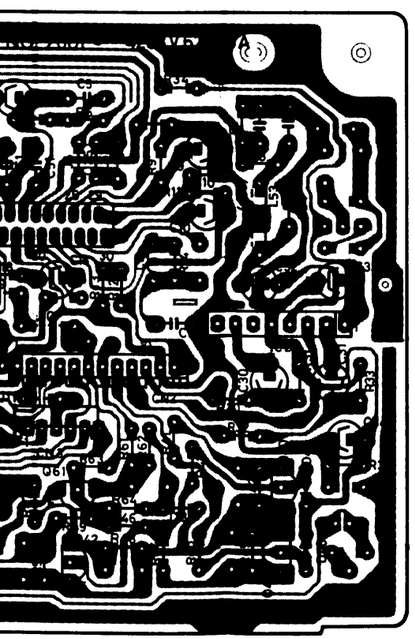


Ⓝ
VHR-D500G
VHR-D500EX

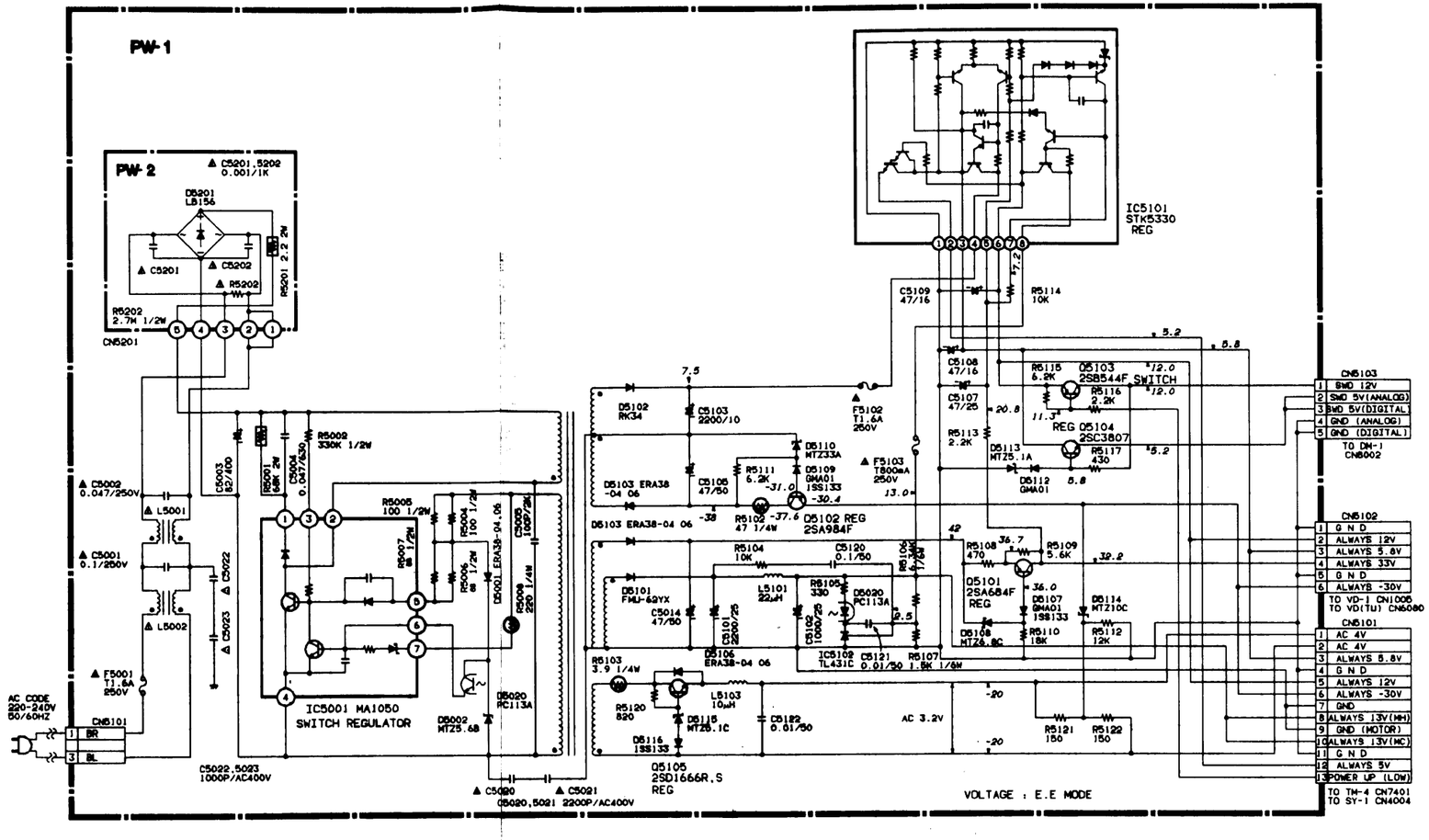
P.C.B. PW-1,2 POWER SUPPLY CIRCUIT & P.C.B. (PW-1 143-0-233V-63250) (PW-2 143-0-233V-63350)

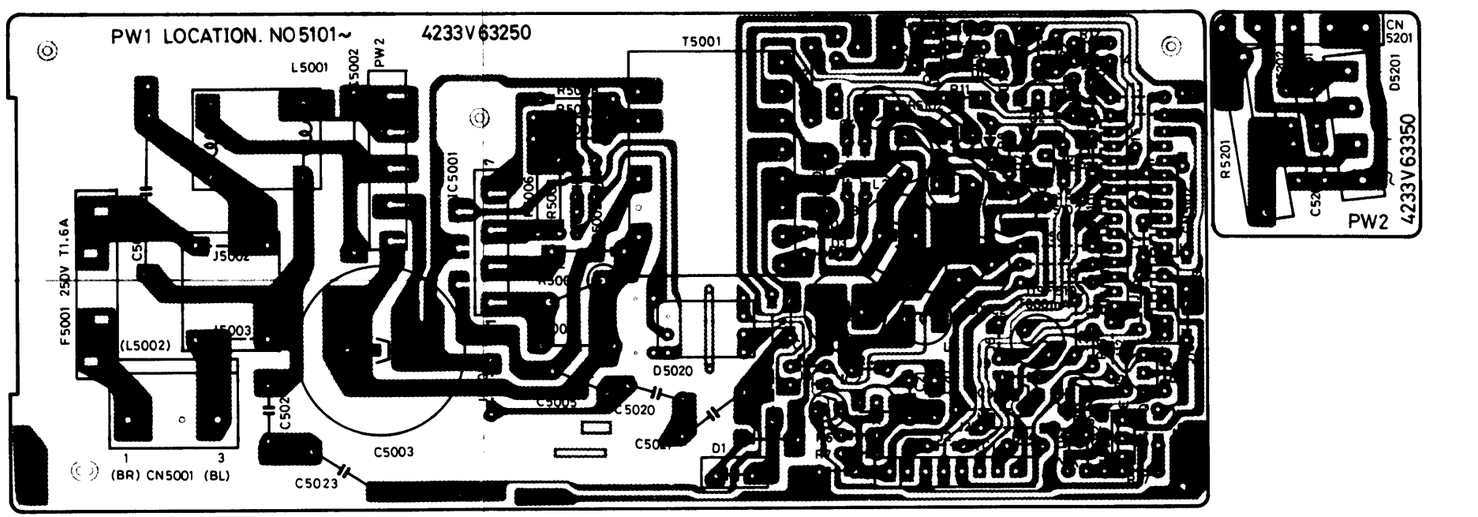
IT & P.C.B. (143-0-233V-62600)





PW-1





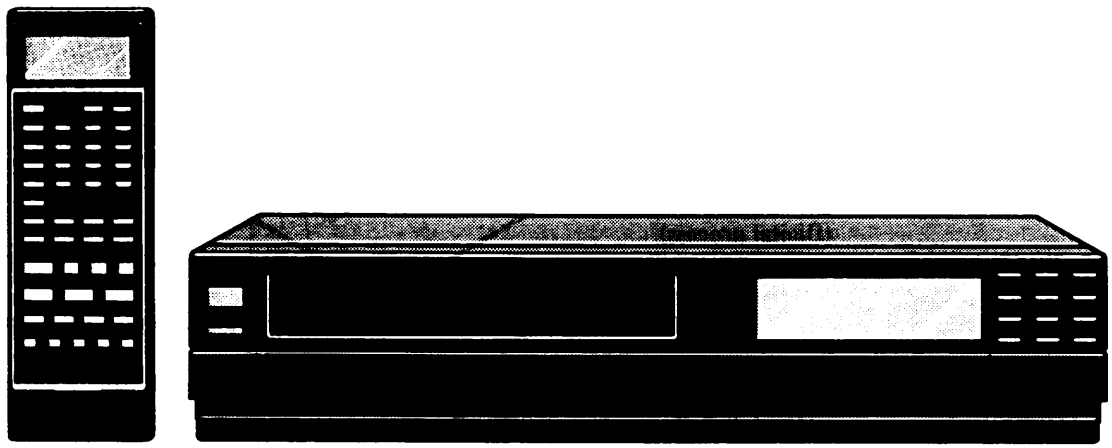
SERVICE MANUAL

SANYO

VHR-D500 Series

COLOUR VIDEO CASSETTE RECORDER

VHS PAL HQ DIGITAL



VHR-D500EX

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Page

1. LOCATION OF THE MAIN BOARD 1
2. ELECTRICAL ADJUSTMENT . . . . . 2 ~ 10

A11300 BP2D SERIES

REFERENCE NO. WM-21355

1. LOCATION OF THE MAIN BOARDS

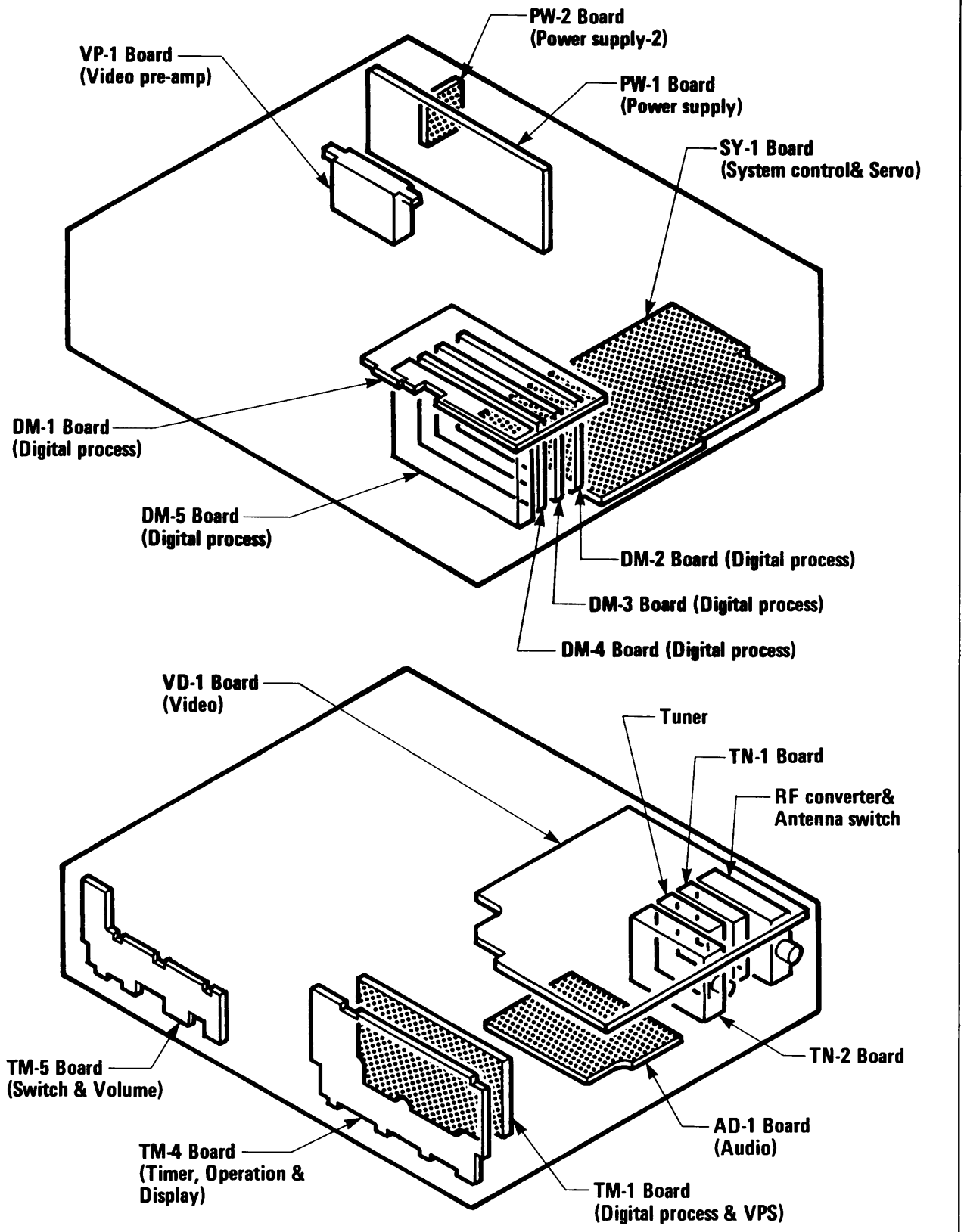


Fig. 1-1-1

2. ELECTRICAL ADJUSTMENTS

2-1. PREPARATIONS

2-1-1. EQUIPMENTS

- **Colour TV monitor**
- **Colour-bar generator (with RF and LINE OUTPUT)**
- **Modulated chroma generator**
- **Audio frequency oscillator**
- **Anttenuator**
- **Oscilloscope (dual trace; frequency response: 10MHz or more; probe: 10:1)**
- **Frequency counter (countable to 10MHz or higher)**
- **Digital voltmeter**
- **Alignment cassette (VHJ-0008) Colour bar 1KHz**
- **Alignment cassette (VHJ-0009) Monoscope 6KHz**
- **Alignment cassette (VHJ-0010) RF Sweep**
- **Alignment cassette (VHJ-0023) PAL Monoscope 6KHz, PAL Colour-bar 1KHz, SECAM Colour-bar 1KHz, PAL RF Sweep MESECAM Colour-bar 1KHz, NTSC Colour-bar 1KHz.**
- **AC voltmeter**
- **In/output probes**
- **Jigs for DM-2, 3, 4, 5 board (VHJ-0037, VHJ-0038, VHJ-0039, VHJ-0040)**

2-1-2. SET-UP

Because the RF input signal is used for adjustment of circuits, connect the colour-bar generator to the ANT IN terminal of the VCR. The RF input signal is processed by the tuner and IF circuit. It is important that the video output signal of the IF circuit satisfy the items shown in figure. Connect the oscilloscope to the VIDEO OUTPUT terminal of the video circuit, and then check the video output signal.

- The amplitude of the sync signal should be approximately 0.3Vp-p.
- The amplitude of the video signal should be approximately 0.7Vp-p.
- While observing the oscilloscope or TV screen, make fine-tuning adjustments so that the colour burst amplitude is approximately 0.3Vp-p.
- Check to be sure that there is no spike noise in the sync part of the horizontal sync signal.

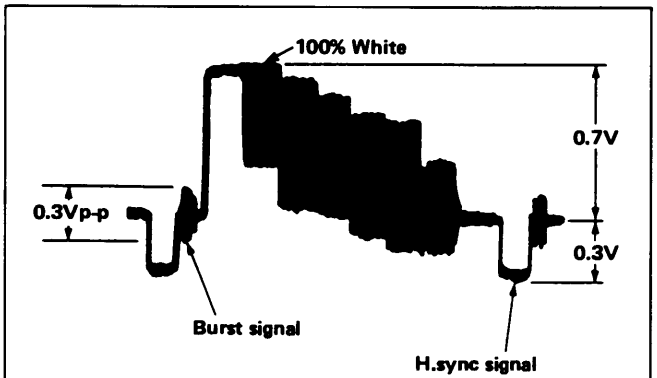
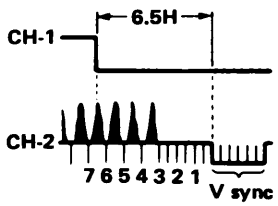
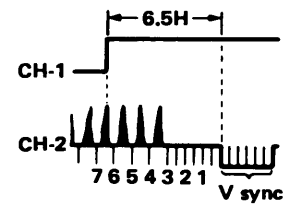
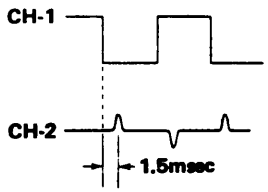
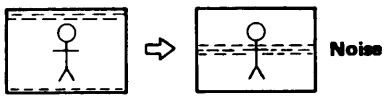
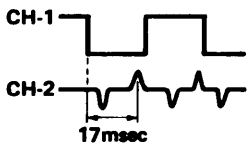


Fig. 2-1-1

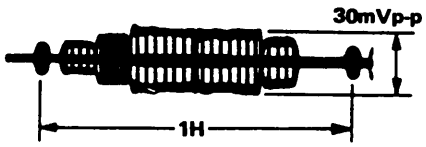
2-2. SERVO CIRCUIT ADJUSTMENT ... SY-1 Board

No.	Item	Input	Mode	Point	Location	Remark
1	CH-1 SWITCHING POSITION	Alignment cassette (VHJ-0009 or VHJ-0023)	PLAY	TP1001 (VIDEO OUT terminal) CN4008 ① (trigger)	SVR4001	 Adjust SVR4001 so that the phase of the leading edge of the vertical sync signal is delayed 6.5 ±0.5H from the fall of the CH-1 waveform.
2	CH-2 SWITCHING POSITION	Alignment cassette (VHJ-0009 or VHJ-0023)	PLAY	TP1001 (VIDEO OUT terminal) CN4008 ① (trigger)	SVR4002	 Adjust SVR4002 so that the phase of the leading edge of the vertical sync signal is delayed 6.5 ±0.5H from the fall of the CH-1 waveform.

No.	Item	Input	Mode	Point	Location	Remark
3	TRACKING	Any TV broadcast	REC ⬇ PLAY	CN4008 ④ CN4008 ① (trigger)	SVR4003	 1. Playback the recorded portion, and set the normal tracking control to the center click position. 2. Adjust SVR4003 so that the phase of the CH-2 waveform is 1.5 ±0.5msec after the fall of the CH-1 waveform. In this instance, delay the CH-2 waveform.
4	SLOW TRACKING	Any TV broadcast	REC ⬇ PLAY ⬇ SLOW	TV screen	SVR4005	 1. Connect a lead wire between TP8001 (DM-1 board) and ground. 2. Playback the recorded portion, and put the VCR in the SLOW mode. Then set the slow tracking control to the center position. 3. Adjust SVR4005 so that the noise appears at the center position on the TV screen. 4. Remove a lead wire.
5	X 2 PLAYBACK	Any TV broadcast	REC ⬇ PLAY ⬇ X 2	CN4008 ④ CN4008 ① (trigger)	SVR4006	 1. Playback the recorded portion, and put the VCR in the X2 playback mode. Then set the normal tracking control to the center position. 2. Adjust SVR4006 so that the phase of the CH-2 waveform is 17 ±1msec after the fall or rise of the CH-1 waveform. In this instance, delay the CH-2 waveform.

2-3. VIDEO CIRCUIT ADJUSTMENT ... VD-1 Board

No.	Item	Input	Mode	Point	Location	Remark
1	VXO	Brank tape	PLAY	TP1006	SVR1202	Adjust SVR1202 so that the frequency is 4433619 ±20Hz.
2	CCD LEVEL	Colour bar from Colour bar generator	E-E	TP1003 TP1004	SVR1102	 Adjust SVR1102 so that the same level of TP1003 and TP1004 waveforms.

No.	Item	Input	Mode	Point	Location	Remark
3	CHRO-MINANCE SIGNAL RECORDING CURRENT	Colour-bar from Colour bar generator	REC	CN1603 ① (GND) CN1603 ③ (HOT)	SVR1201	 1. Turn SVR1001 all the way to the left looking from the parts side. 2. Adjust SVR1201 so that the level is 30 ±2mVp-p.
4	LUMINANCE SIGNAL RECORDING CURRENT	S/W signal from Colour bar generator	REC	CN1603 ③ (GND) CN1603 ① (HOT)	SVR1001	 Adjust SVR1001 so that the level is 120 ±5mVp-p.
5	VIDEO INPUT LEVEL	Colour-bar from Colour-bar generator	E-E	TP1001 TP1012	SVR1502	Adjust SVR1502 so that the same level of TP1001 and TP1012 waveforms.

2-4. VIDEO DIGITAL PROCESS CIRCUIT ADJUSTMENT ... DM-2, 3, 4 Board

The digital process circuit boards are installed in the unit on the right side in five parts. The inner circuit boards cannot be adjusted without first removing the DM-2 & DM-3 circuit boards. When making an adjustment, therefore, use the jigs (VHJ-0037, VHJ-0038, VHJ-0039, VHJ-0040) for making the connection between them. (See Fig. 2-4-1)

(Caution)
Each jigs should be soldered on DM-1 board.

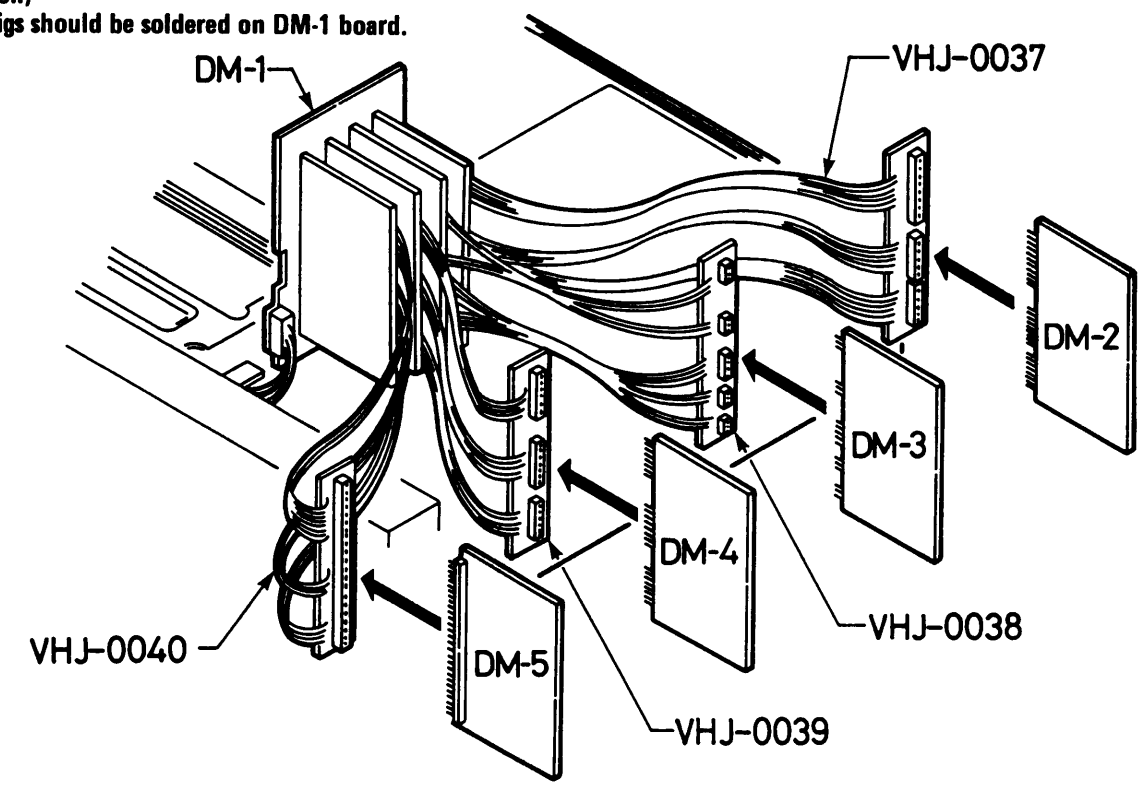
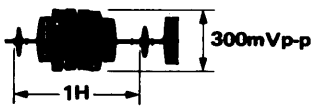
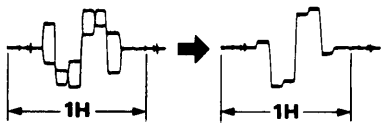
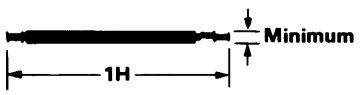
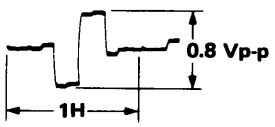
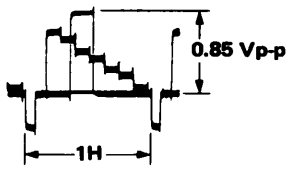
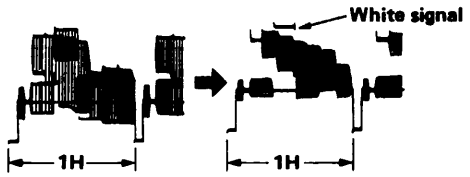
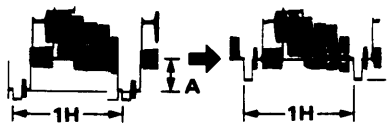
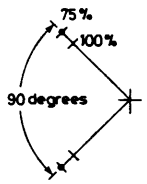


Fig. 2-4-1 Method of using jigs

NOTE: (1) No signal E-E mode is do not supply any signal to the VIDEO INPUT terminal (CN1501 ⑲).
(2) Adjustment No. 8 is unnecessary for the new DM-4 board (P.C.B. No. 4 233V 63950A~).
(3) Adjustment No. 9 is unnecessary for the old DM-4 board (P.C.B. No. 4 233V 63950).

No.	Item	Input	Mode	Point	Location	Remark
1	AFC (1) V·OSC	No signal	E-E	TP8204	SVR8203 (DM-3 board)	Adjust SVR8203 so that the frequency is 46 ±1Hz.
2	AFC (1) H·OSC	No signal	E-E	TP8203	SVR8204 (DM-3 board)	Adjust SVR8204 so that the frequency is 15625 ±50Hz.
3	AFC (2) V·OSC	No signal	E-E	TP8202	SVR8201 (DM-3 board)	Adjust SVR8201 so that the frequency is 46 ±1Hz.
4	AFC (2) H·OSC	No signal	E-E	TP8201	SVR8202 (DM-3 board)	Adjust SVR8202 so that the frequency is 15625 ±50Hz.
5	MAIN DECODER VXO	Colour-bar from Colour-bar generator	E-E	IC8302 ⑲	CT8302 (DM-4 board)	1. Connect a lead wire between pin 5 of IC8302 and ground. 2. Adjust CT8302 so that the frequency is 4433618 ±20Hz. 3. Remove a lead wire
6	MAIN DECODER ACC	Colour-bar from Colour-bar generator	E-E	IC8302 ③	SVR8303 (DM-4 board)	 Adjust SVR8303 so that the level is 300 ±15mVp-p.
7	SUB DECODER VXO	Colour-bar from Colour-bar generator	E-E	IC8301 ⑲	CT8301 (DM-4 board)	1. Connect a lead wire between pin 5 of IC8301 and ground. 2. Adjust CT8301 so that the frequency is 4433618Hz ±20Hz. 3. Remove a lead wire from DM-4 board.
8	NOTE (2) SUB DECODER TINT	Colour-bar from Colour-bar generator	E-E	CN8301 ⑥	SVR8302 (DM-4 board)	 1. Turn SVR8301 to the center position. 2. Adjust SVR8302 so that the waveform is merged together to becomes as one.
9	NOTE (3) SUB DECODER B-Y/R-Y SEPARATION GAIN	B-Y signal from Modulated chroma generator	E-E	IC8301 ③ ⑰	SVR8302 (DM-4 board)	 1. Turn SVR8301 all the way to the left 2. Adjust SVR8302 so that the B-Y leakage is minimum.
10	SUB DECODER ACC LEVEL	Colour-bar from Colour-bar generator	E-E	CN8301 ⑥	SVR8301 (DM-4 board)	 Adjust SVR8301 so that the R-Y level is 0.8 ±0.05Vp-p.

No.	Item	Input	Mode	Point	Location	Remark
11	SUB LUMINANCE LEVEL (1)	Colour-bar from Colour-bar generator	E-E	CN8101 ②	SVR8101 (DM-2 board)	 Adjust SVR8101 so that the luminance level is 0.85 ±0.02Vp-p.
12	ENCODER CARRIER LEAK	Colour-bar from Colour-bar generator	E-E ⬇ MEMORY STILL	IC8105 ⑭	SVR8103 SVR8105 (DM-2 board)	 1. Put the VCR in the E-E mode, then press the MEMORY button. 2. Adjust SVR8103 and SVR8105 so that the white signal carrier leakage is minimum.
13	SET UP LEVEL	Colour-bar from Colour-bar generator	E-E ⬇ MEMORY STILL	IC8105 ⑭	SVR8107 (DM-2 board)	 1. Put the VCR in the E-E mode, then press the MEMORY button. 2. Adjust SVR8107 until "A" portion in the waveform become zero.
14	BURST FLAG PULSE	Colour-bar from Colour-bar generator	E-E ⬇ MEMORY STILL	VIDEO OUTPUT terminal	SVR8104 SVR8106 (DM-2 board)	 1. The video output terminal of the vectorscope should be terminated at 75ohms. 2. Put the VCR in the E-E mode. 3. Set the vectorscope's GAIN in "75% STD", and vector display in "BOTH" modes. Adjust the vectorscope's "GAIN control" so that the burst spot is located at the 75% specified scale. 4. Put the VCR in the MEMORY STILL mode. 5. Adjust SVR8104 to obtain 90 degrees of burst phase. 6. Adjust SVR8106 so that the burst spot is located at the 75% specified scale.

2-5. AUDIO CIRCUIT ADJUSTMENT ... AD-1 Board

NOTE: (1) No signal record mode is do not supply any signal to AUDIO input terminal (CN1501 ② ⑥).
(2) Adjustment No. 2 is unnecessary for VHR-D500A and VHR-D500NZ.
(3) Adjustment No. 3 is unnecessary for VHR-D500E, VHR-D500EX, VHR-D500G and VHR-D500SP.

No.	Item	Input	Mode	Point	Location	Remark
1	BIAS	No signal	REC	CN2004 ① (ground) ③ (hot)	SVR2001	1. Set the AV/TU button to "AV" position and put the VCR in the no-signal record mode. 2. Adjust SVR2001 so that the level is 26mVrms.
2	PLAYBACK OUTPUT LEVEL NOTE (2)	Audio signal (1KHz, -3.8dBs) from Audio signal generator	REC ⬇ PLAY	AUDIO OUT terminal (CN1501 ① or ③)	SVR2002	Adjust SVR2002 so that the recorded 1KHz output level becomes –3.8dBs in the PLAY mode.
3	PLAYBACK OUTPUT LEVEL NOTE (3)	Audio signal (1KHz, -20dBs) from Audio signal generator	REC ⬇ PLAY	AUDIO OUT terminal	SVR2002	Adjust SVR2002 so that the recorded 1KHz output level becomes –8dBs in the PLAY mode.

2-6. TUNER IF CIRCUIT ADJUSTMENT

No.	Item	Input	Mode	Point	Location	Remark
1	RF AGC	TV broadcast	E-E	TV screen	SVR6001	Turn SVR6001 in the direction which causes snow to appear, then in the opposite direction until the snow just disappears.

2-7. TEST POINT AND ADJUSTMENT LOCATION

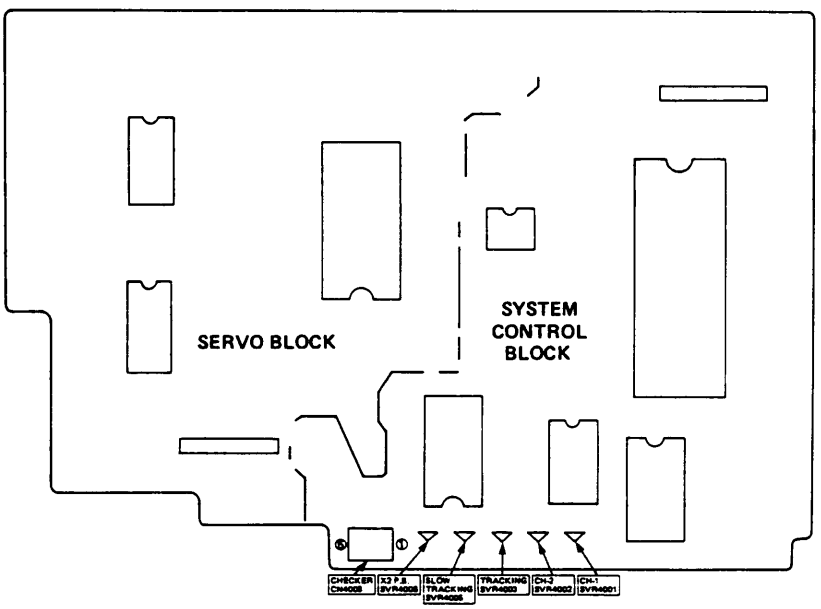


Fig. 2-7-1 SY-1 board (Foil side view)

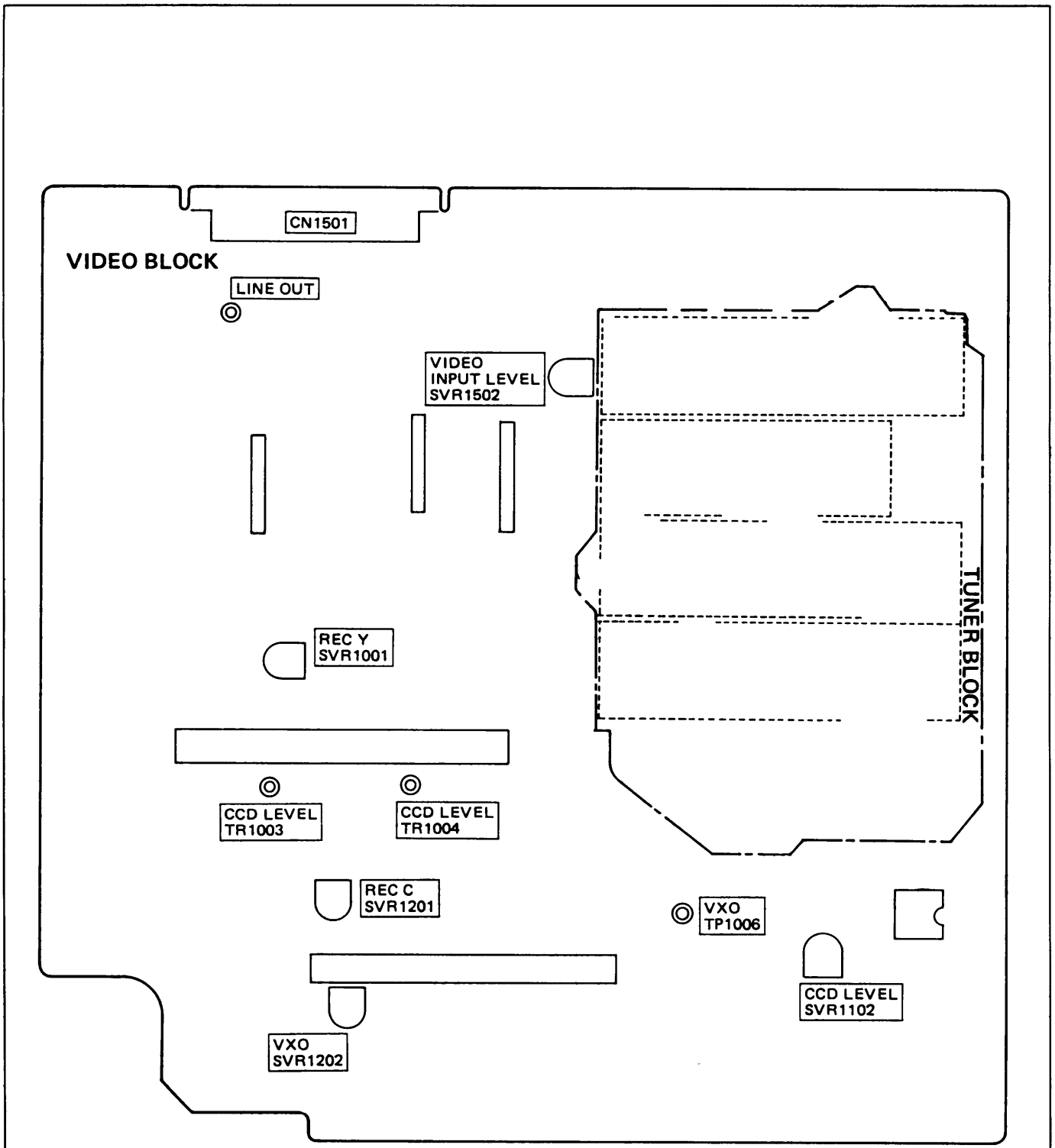


Fig. 2-7-2 VD-1 board (Foil side view)

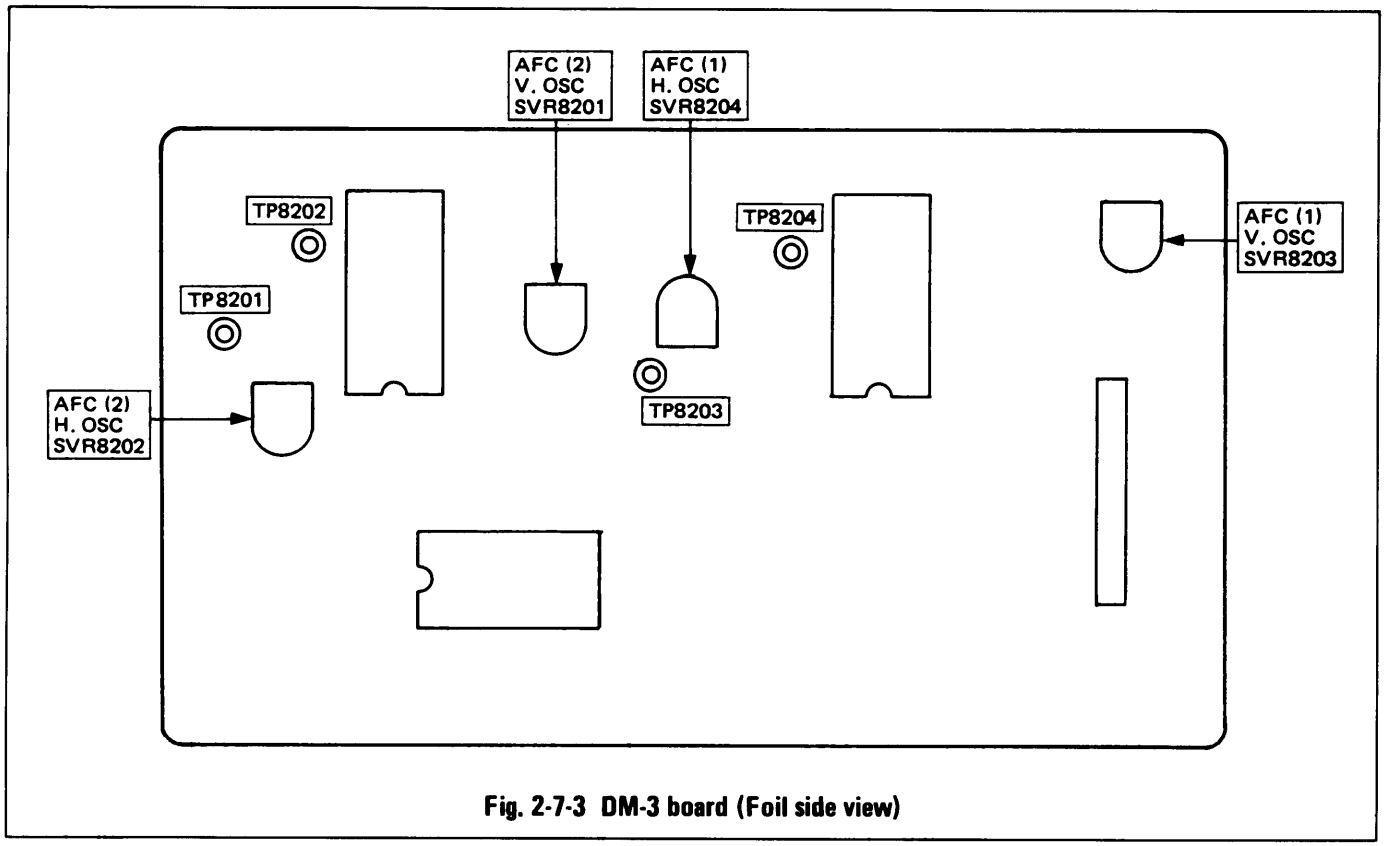


Fig. 2-7-3 DM-3 board (Foil side view)

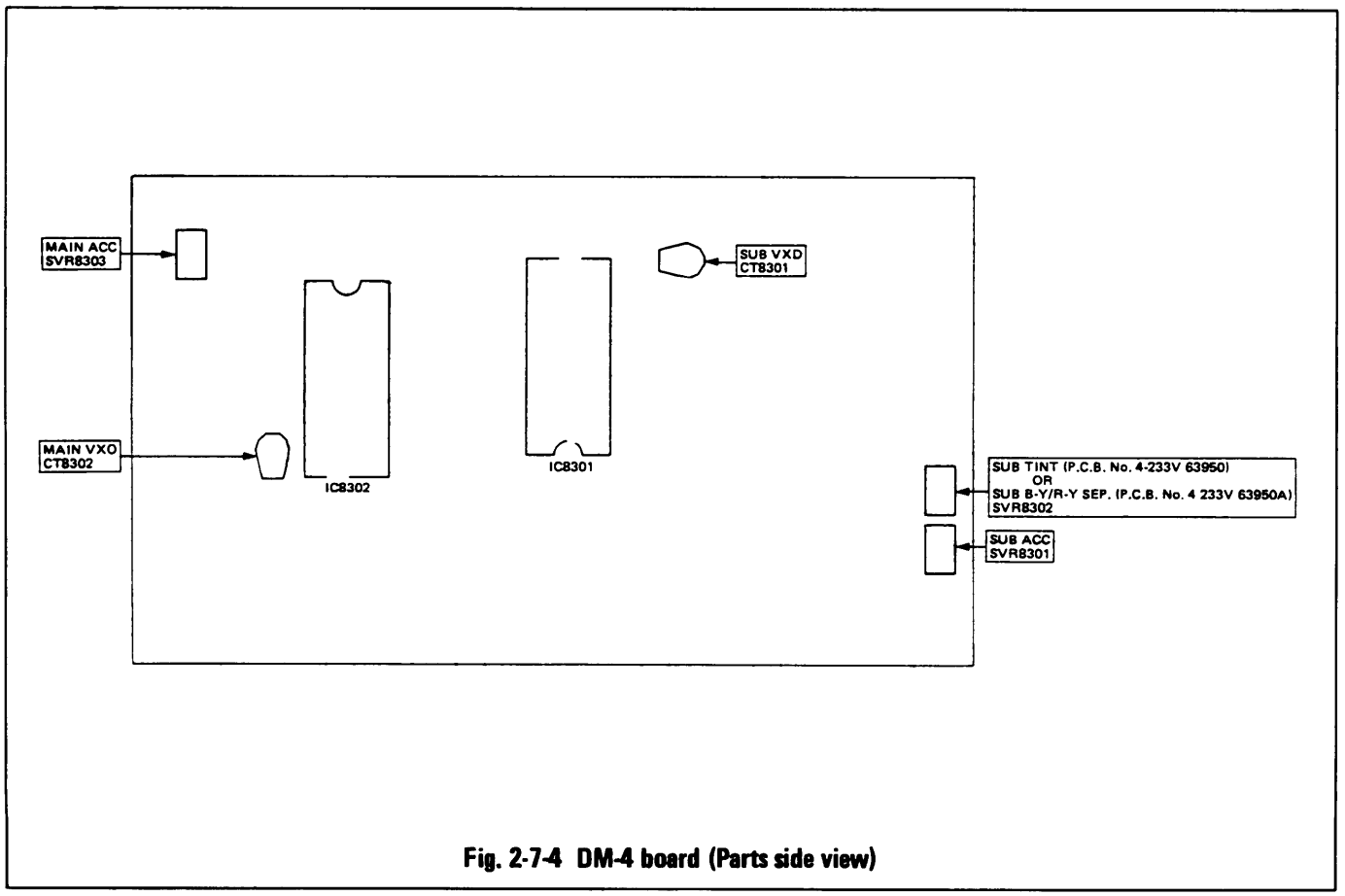


Fig. 2-7-4 DM-4 board (Parts side view)

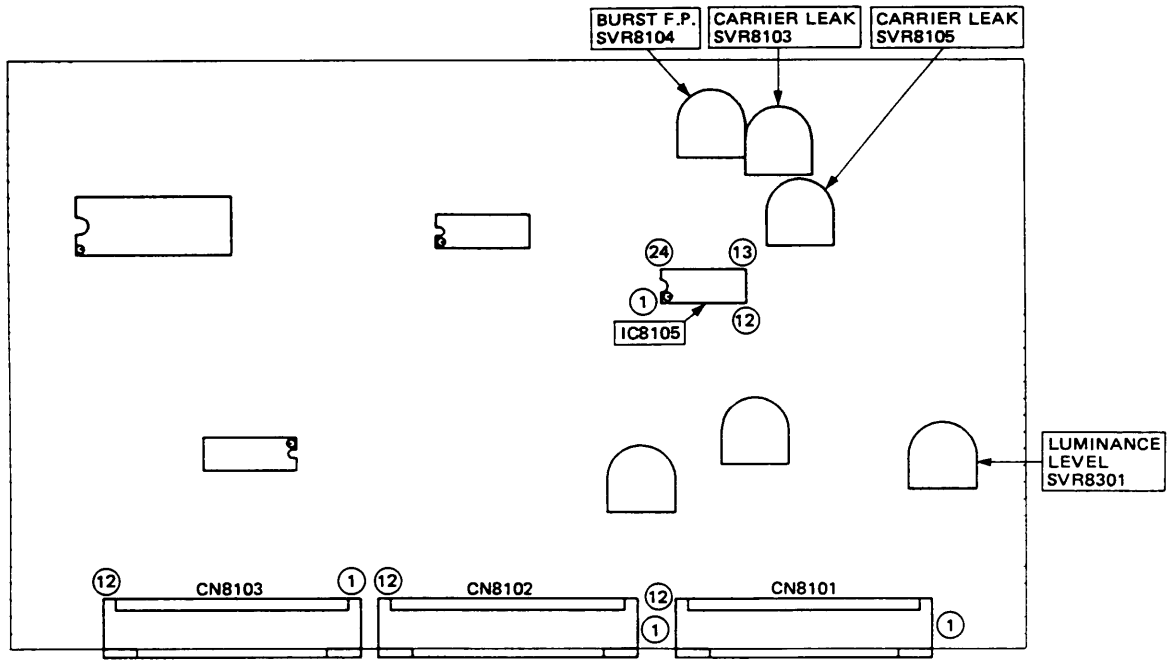


Fig. 2-7-3 DM-2 board (Side A)

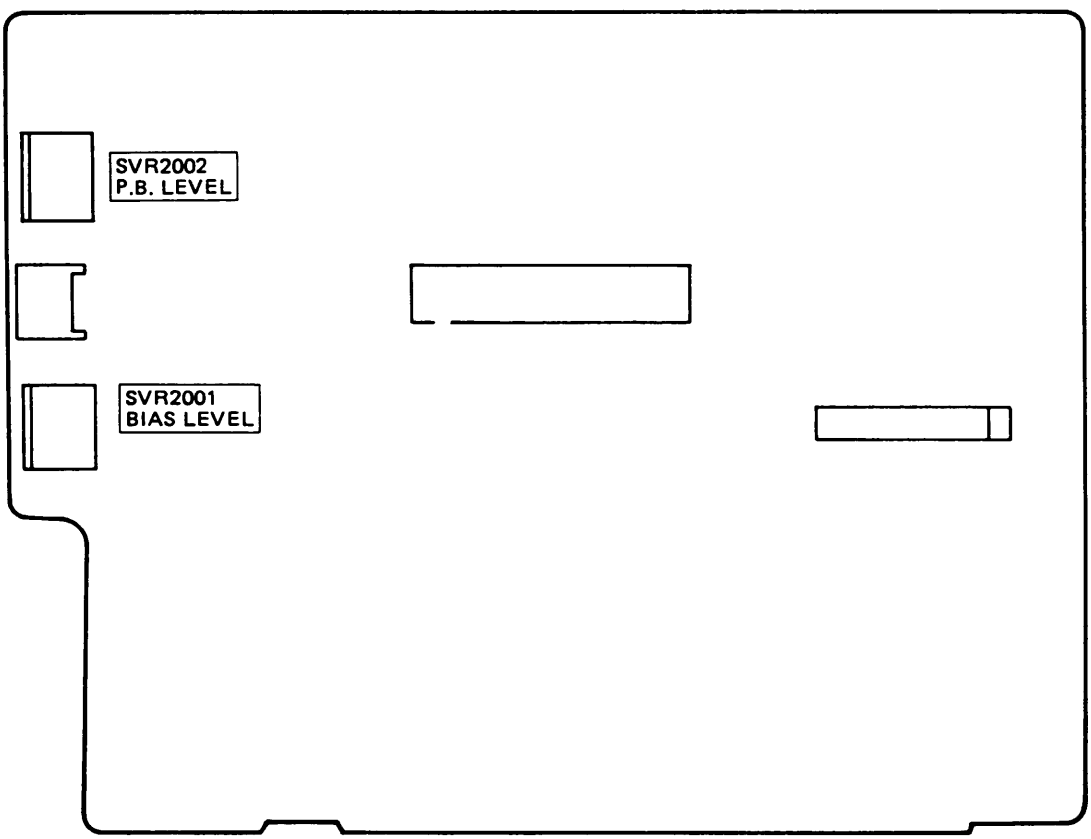


Fig. 2-7-4 AD-1 board (Foil side view)